7030 DPS

BX - O
File No. KA EX1
          KA EX1A
          KA EX1B
          KA EX1C

BX - O

BASIC EXCHANGE PARALLEL MAINTENANCE PROGRAM

September 1, 1961

1. Maintenance program.   Used to test data paths to and from I/O units
and to and from main memory independent of CPU.

2. Programs becoming obsolete.   None.

3. KA EX1 and KA EX1A are applicable to systems using 48 ECS
printer code.   KA EX1B and KA EX1C are applicable to
systems using 48 BCD printer code.

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1. PURPOSE

The purpose of the BX-0 Maintenance Program is to test data paths to and from the I/O units and to and from Main Memory, independent of CPU.

2. EQUIPMENT REQUIREMENTS

N- Necessary for Basic Testing
A- Additional Requirements for Full Testing
* - Exception

2.1 Testing Requirements

0-8K	8K-16K	16K-32K	32K-Above	Ops Console	Card Reader
		N		N	N

Punch	Printer	Disc	Tapes		
N	N		N		

2.2 Buffer Equipment Requirements

Disc	Tapes

3. MODE OF CONTROL

3.1 Self Control

BX-O is exclusively a manually operated test, since it is independent of the CPU. It requires the operator to manually set the bits on the exchange maintenance console and manually execute all instructions. The output from each I/O unit test is indicated in the section containing the instructions for that test.

3.1.1 Procedure

I. INITIAL LOAD PROCEDURE

The program can be loaded by normal IPL procedure. If IPL is inoperative, the following can be used:

1. By BX manipulation, place the following CW in a main memory location not used by the program.

   Data Word Address - SLC Value
   Word Count - As shown in the program listing
   Refill - 0
   Chain flag - 0, Multiple flag - 1

2. Read by executing the CW in the location in which it was stored by step 1.

II. OVERALL PROCEDURE

All tests of BX-0 require the operator to manually execute control words in Main Memory and to execute various Control and Locate instructions. The following procedure should be followed in the execution of these instructions:

A. Reading or Writing

   1. Place the BX mode switch in the TEST MODE position.

   2. Depress CLEAR MEMORY pushbutton.

   3. Set "Type of Test" to EX MEM.

   4. From the BX-0 listing, obtain the main memory address of control word desired. Place this address in the REFILL ADDRESS of the panel keys.

5. In the EXCHANGE MEMORY ADDRESS switch register, enter the CHANNEL NUMBER desired and bit 128 (Control Word Memory). Make the total parity ODD.

6. Depress the "LOAD MEMORY" switch.

7. Depress SINGLE CYCLE pushbutton twice.

8. Turn OFF the load memory switch.

9. In the exchange memory address switch register, turn OFF bit 128. Parity should now be even.

10. Be sure the channel to be used is NOT blocked by the BLOCK CHANNEL switches. All data word transfer, service request, and channel signal simulation switches should be OFF.

11. Set type of test to Main Memory UNIT.

12. Depress the READ or WRITE pushbutton depending upon instruction desired.

13. Depress the SINGLE CYCLE pushbutton and check ACCEPT response.

14. Depress the START Key. The instruction entered will now be executed.

15. To insure proper operation, stop BX and SINGLE CYCLE through BX control word memory until the channel used is selected. At this time, examine the control word for proper interrupt status bits, data word address, and word count setting. Unless otherwise stated. the normal status bit setting is EOP The flag bits (chain, multiple, and skip) should still be at their original setting.

B. Control or Locate Operations

1. Place the BX Mode switch in the TEST MODE position.

2. Depress CLEAR MEMORY pushbutton.

3. Set "type of test" to UNIT TEST.

4. Set the desired channel number in the EXCHANGE MEMORY ADDRESS switch register, even parity count. (Bit 128 must be OFF.)

5. In the C_0 - C_t panel switches, enter the CONTROL CODE or LOCATE NUMBER desired.

6. Depress the CONTROL or LOCATE pushbutton.

7. Depress SINGLE CYCLE pushbutton and check for ACCEPT response.

8. Depress the START pushbutton and the STOP.

III. INDIVIDUAL TEST PROCEDURE AND OUTPUT

A. Chain Printer Tests

1. Execute the control words as shown on the program listing following the overall test procedure.

2. Check printout for correct data as shown below.

PRT 1 operates with chain, multiple, and skip flags zero. Printout is:

THIS LINE OF PRINT CHECKS THE ABILITY TO PRINT. AB -- YZ12-90%./- #$&*%

PRT 2 operates with multiple flag only set. Printout is an all character print, three lines, each identified. Failure will cause only one line to be printed.

PRT 3 operates with multiple flag set and tests the ability to recognize end codes. Printout is three lines each identified. On failure - All data will be on one line.

PRT 4 tests BX for word count of 1. Printout is WDCT 1- for sucess WDCT 1 FAILURE - on failure

PRT 4A tests BX for word count of 2. The printout is: WORD COUNT 2 - On success WORD COUNT 2 FAILURE - on failure.

PRT 5 operates with multiple and chain flags set. Printout is all data from the above tests, a total of 109 64-bit words.

PRT 6 is a scoping loop which prints the all character print data.

PRT 7 is a scoping loop which prints the end code print data.

PRT 8 is a Suppress Post Spacing test loop. It will suppress post spacing 4 times in each line. For success, all data will be on one line, with normal spacing.

        PRT 8 - NOW IS A SUPPRESS POST SPACING TEST
             LOOP.

PRT 9 is a test of the Select Report functions. It prints according to the Select Report key depressed. If no Select Report keys are depressed all of the select report data will be printed.

The test operates in a continuous loop.

        PRT 9 - THIS LINE SHOULD BE PRINTED IF SELECT
             REPORT 'a' IS DEPRESSED.

Where 'a' corresponds to the Select Report key depressed.

B.   Card Reader Tests

1.   Place reader test deck in card reader and make reader ready. The test deck is numbered octally in column 80.

2.   Execute the control words to read in the test deck.

3.   Execute the control words for printout or manually fetch the data and compare.

The first test operates with skip, chain, and multiple flags set. The sequence of data is as follows:

1.   One Card Read

    CARD 1 ..... FIRST CARD READ ... DATA IS
    IN IQS FORMAT. WORD COUNT ON READ WAS
    15. READER PATTERNS IN LATER TEST

2.   Word Count 1 Test.   On success - WDCT1 On failure - WDCT 1 FAILURE IF THIS PRINTS OR IS IN MEMORY WD CNT-1 was not handled by BX . . . . .

3.   Word Count 2 Test.   On success - WORD COUNT - 2 - On failure - WORD COUNT - 2 - FAILURE

4.   Skip Flag Test. On success - THIS IS THE SKIP READ AREA ..... CARD 4 - SKIP FLAG TEST On failure - IF THIS PRINTS SKIP FLAG FAILED.

5.   Multiple Flag Test - 3 cards read. Lines of print begin as follows:

                CARD 5
                CARD 6
                CARD 7

    If only one card reads, MF failed and remainder of test will be out of sequence.

6.   Long Read Test - 10 cards read.   Lines of print begin as follows:

                CARD 8
                CARD 9
                CARD 10
                CARD 11
                CARD 12
                CARD 13
                CARD 14
                CARD 15
                CARD 16
                CARD 17

7.   Chain Flag Only Test. For success - CARD 18. TWO CARD READ WITH MF-0.   ONLY ONE CARD SHOULD READ .... On failure - THIS CARD SHOULD NOT BE READ CARD 19

C.   Tape Unit Tests

1.   Execute the control words and control instructions at the proper time by following the program listing.

Since most tape operations require control conditions such as rewind, backspace, etc., the tape test requires that the operator perform these operations from BX following the program listing. Many of the tests are designed specifically to test a particular control function and, therefore, must be run as specified by the program listing. Correct operation is evidenced by the correct printout as shown under the description of each of the five tests.

Test 1. Simple Data and Rewind. Check read-in area manually. Data: An all 1's 8-bit byte shifts left continuously until an all 0's word is reached. Following this an all 1's word, a 101010 word, and a 010101 word.

Test 2. Data and backspace test. Data checked by printing results on the printer. Data follows:

For Success - TEST 2. DATA AND BACKSPACE TEST THIS
      IS RECORD 1 - TEST TWO .... 10 WORDS,
      CDSC...

      TEST 2. RECORD 2 - 15 WORDS, CDSC .. DATA
      FOLLOWS --- AB ... YZ01 ... 89 --------
      RECORD 3 IS BKSP TEST.

      TEST 2. BACKSPACE WORKED IF THIS LINE 3
      TEST 2. TEST 2 RECORD 4. 10 WORDS CR.
      XXXXXXXXXXXX

On Failure - IF THIS PRINTS, BACKSPACE FAILED ..

Test 3. Tape Mark Recognition Test. Data checked by printing results on the printer. Data follows:

For Success - TAPE MARK RECOGNITION RECORD 1.

On Failure - IF THIS PRINTS, TAPE MARK FAILED.

Test 4. Backspace file test. Data checked by printing results on the printer. Data follows:

For Success - TEST 4. BACKSPACE FILE TEST TEST 4.
      BACKSPACE FILE TEST PASSED ......

On Failure - TEST 4. BACKSPACE FILE FAILED.

Test 5. Space File Test. Data checked by printing results on printer. Data follows:

For Success - TEST 5. SPACE FILE TEST PASSED.

On Failure - SPACE FILE, TEST 5. FAILED.
      XXXXXXXXXXXXX

Also included is a sequence of control words which reproduce the program on tape. The tape can then be loaded by IPL procedure.

D. Operator's Console Tests

  In the operator's console tests the following is provided.

  1. Constants for writing on the console display and typewriter.

  2. Reserved locations for reading the console switches and typewriter.

  3. Extended typewriter write operations tests.

  The procedure for each test follows.

  Test 1 and 2. Write Operation

  1. Execute the control words - write having the console channel selected.

  2. After each control word is executed, check the display for the data indicated.

  Test 1. Chain, multiple and skip flags zero.

Word one - 1. Byte number word which numbers the 8-bit bytes left to right 0-7.

      2. All 1's word

      3. All 0's word

      4. Alternate 1's and 0's 8 bit bytes.

Word two -   1. All 8's word

                2. All 7's word

                3. Blank word

Word three - 1. All 1's word

Test 2. Chain flag set, multiple and skip flags zero.

Chaining two words -   Word 1 - Byte pattern
                                 Word 2 - All 8's

Chaining three words -   Word 1 - All 1's
                                 Word 2 - All 8's
                                 Word 3 - All 0's

Test 3 and 4.   Read Operation

1. Set up data patterns in the console switches and digital pot.

2. Execute the control word to read the switches.

3. Execute the same control word to write the data for checking.

4. Change the patterns and repeat step 2 and 3 for a more complete test.

Test 3. All flag bits zero.

     1.   Read 1 word
     2.   Read 2 words
     3.   Read 3 words

Test 4. Chain flag set.

     1.   Chains 2 words
     2.   Chains 3 words

Tests 5, 6 and 7.   Typewriter write operation.

1.   Execute the control words.

2.   Check the printout for correct results.

Test 5. Chain, multiple, and skip flags zero.

     1.   One word - on success   TYP TST
                              on failure   **TYP TST FAILED**

     2.   End Code Test - on success - END CODE TEST
                              on failure - END CODE TEST
                                          FAILED

     3.   One line which is A thru Z 1 thru 0

Test 6. Chain flag set.

1. Chain 2 words - on success - CHAINING TEST S
                        on failure -   FAILED

2. Chain 3 words - on success - CHAINING TEST SUCCESS
                        on failure -   FAILED

Test 7. Chain and Multiple flags set

1. Multiple flag and end code - on success - MLTIPLE TEST SUCCESSFUL
On failure - Spaces between 'MLTPLE' and 'TEST'.

2.. Simultaneous end code and word count zero - on success - MC TST SUCCESS
On failure - Spaces between 'TEST' and 'SUCCESS'.

Test 8 and 9.   Typewriter Read Operation

1. Execute control words and read console.

2. Enter data from console typewriter.

3. Using the same control words and write out data for checking.

Test 8. Chain and multiple flags set.

1. Read 40 characters, no flags set.

2. Read 40 characters, chain, read 32 more.

3. Read 8 words multiple flag mode.

4. Read 25 words with multiple flag set.

5. Read 10 words with the multiple flag set, chain, read 8 more words.

Test 9. Chain, multiple and skip flags set.

1. Skip 5 words, read 3 with chain flag only set.

2. Skip 4 words in multiple block mode, chain, read 5 more words.

In the read tests with the multiple flag set, and an end code is entered, the next three words will be read from the console switches.

Typewriter Tests

1. Backspace test loop.

   Loops and types - This is a BACKSPACE test.

2. Ripple test.

   Types 26 lines upper case letters.

3. All character ball movement test.

   Loops and types all characters.

E. Card Punch Tests

   Tables of punch formats for checking pattern cards.

   1. Non ECC-Mode, 15 words per card- Starting bit position.

Word	Column	Row
1	1	12
2	6	2
3	11	6
4	17	12
5	22	2
6	27	6
7	33	12
8	38	2
9	43	6
10	49	12
11	54	2
12	59	6
13	65	12
14	70	2
15	75	6

2. ECC Mode, 13 words per card.

   All words begin with the C-bits in Row 12

Word	Column
1	1
2	7
3	13
4	19
5	25
6	31
7	37
8	43
9	49
10	55
11	61
12	67
13	73

3. Table of bits on which the ECC bits are based.

ECC Bits	Data Bits
C-0	0-32
C-1	1, 3, 5, ...61, 63, & 32
C2	2-3, 6-7, 10-11,... 62-63
C-4	4-7, 12-15, ... 60-63
C-8	8-15, 24-31, 40-47, 56-63
C-16	16-31, 48-63
C-32	0, 32-63

C-T is based on overall parity including ECC bits.

Card Punch Test Procedure

1. Make card punch ready.

2. Execute the control words with a write instruction to the card punch.

3. Examine the cards if in the pattern tests, or if in the extended tests use the control words provided for the card reader and printer to check the data.

1. Test 1. Punch Pattern Cards

Non ECC Mode - Punches a diagonal pattern from Column 1, Row 12, to Column 12, Row 9, a total of 13 cards punched.

ECC Mode

1. Punch 9 cards and floats a '1' in the C-bits.

2. Punch 9 cards and floats a '0' in the C-bits.

Test 2. Extended Punch Tests

This test uses printer data and the card reader and chain printer for checking. Each test card is identified with an octal number in the last column.

3.1.2. Success Indications

The success indications are indicated in the detailed test procedure.

3.1.3 Failure Indications

The failure indications are listed in the detailed test procedure.

3.1.4 Supplementary Information

I. Strap Code Control Word Format

The format for a Strap Coded Control Word is as follows:

CW(OP), Data Word Address, Word Count, Refill, where 'OP' is coded as in the table below:

OP	Skip Flag	Multiple Flag	Chain Flag	Operation
CR	0	0	0	Count Within Record
CCR	0	0	1	Chain Counts Within Record
CD	0	1	0	Count Disregarding Record
CDSC	0	1	1	Count Disregarding Record, Skip and Chain
SCR	1	0	0	Skip, Count Within Record
SCCR	1	0	1	Skip, Chain Counts Within Record
SCD	1	1	0	Skip, Count Disregarding Record
SCDSC	1	1	1	Skip, Count Disregarding Record, Skip and Chain

II.   Explanation of File Numbers

Four versions of the BX-0 program are presently available. These programs differ only in the printer code used and in the starting location. The versions are:

File No.	Printer Code	Starting Location
KA EX1	48 ECS	50,000
KA EX1A	48 ECS	100,000
KA EX1B	48 BCD	50,000
KA EX1C	48 BCD	100,000

4.   PROGRAM PHILOSOPHY

BX-0 is designed for parallel maintenance. It uses control word sequences to test data paths to and from main memory and to and from the I/O units. The test is independent of CPU and requires the ability to get to and from main memory to operate.

All tests start with the simplest control words and proceed to include the chain, multiple and skip flags. The test is executed completely from BX and, therefore does not test communication paths to and from CPU or all of the control functions.

Program: **BX-0**
File: **KA EX1**
EC Level: **KA EX1A**
         ' **KA EX1B**
          KA EX1C

PROGRAM SUMMARY

PROGRAMS OBSOLETED   None.

FUNCTION   To test the data paths to and from the I/O units and to and from main memory independent of CPU.

BASIC CONTROLS   Controlled manually from the BX console.

MANUAL INTERVENTIONS   Not applicable.

SUCCESS INDICATIONS   Correct data in memory, and correct printouts.

FAILURE INDICATIONS   Failure printouts and incorrect data in main memory.

PROGRAM OPTIONS

FIGURE 1

SLC,64.0		000100.00
PUNID,KA EX1C	KA EX1C	
END,64.0	100.00	000100.00

PRNID,BX0 - BASIC EXCHANGE OFF LINE MAI.ITENANCE-E.W.JOHNSON

```
          PRNS
          PUNFUL
@
@
@         E. W. JOHNSON
@
@         SEPTEMBER  1, 1961
          SLC,%8¤77777.0                                                                                  077777.00
          SEM,6
@
@
          CW%CD¤,START,END-START&1.,0    @IPL CONTROL WORD          100000.00 20 070740.00 00    077777.00
@         THIS CONTROL WORD IS USED TO READ IN PROGRAM
@         AUTOMATICALLY BY NORMAL - INITIAL PROGRAM LOAD -
@         PROCEDURES...IF IPL IS UNAVAILABLE, THE PROGRAM
@         DECK CAN BE MANUALLY READ-IN BY USING THE
@         FOLLOWING PROCEDURE......
@
@
@
@              1. BY BX MANIPULATION, PLACE THE FOLLOWING CW
@                 IN MAIN MEMORY LOCATION 100.0...
@
@                 DATA WD ADR - 7777.0
@                 WORD COUNT  -
@                 REFILL      - 0
@                 CF-0, MF-1
@
@              2. READ BY EXECUTING STORED CW IN LOC. 100.0
@
@
@         THE FOLLOWING TABLE INDICATES STRAP CONTROL WORD
@         CODING.....
@
@
@         FORMAT......CW%OP¤,DATA WD ADR,WD COUNT,REFILL
@
@         _____
@
@            OP   SKIP   MF   CF   OPERATION
@         _____
@            CR     0     0    0   COUNT WITHIN RECORD
@            CCR    0     0    1   CHAIN CNTS WITHIN RECORD
@            CD     0     1    0   COUNT DISREGARDING RECORD
@            CDSC   0     1    1   COUNT DISREGARDING RECORD
@                                  SKIP AND CHAIN
@            SCR    1     0    0   SKIP,COUNT WITHIN RECORD
@            SCCR   1     0    1   SKIP,CHAIN COUNTS WITHIN
@                                  RECORD
@            SCD    1     1    0   SKIP,COUNT,DISREGARDING
@                                  RECORD
@            SCDSC  1     1    1   SKIP,COUNT,DISREGARDING
@                                  RECORD,SKIP AND CHAIN
@         _____
@
@
@         FOR A DETAILED PROGRAM DESCRIPTION, REFER TO
@         PROGRAM WRITE-UP
```

Label	Instruction	Comment	Code 1	Code 2	Address
START	NOP	@START OF TEST	0.30 00		100000.00
	NOP	@PRINTER SECTION	0.30 00		100000.40
@					
@	PRINTER TEST CONTROL WORDS				
@					
PRT1	CW%CR¤,LINE1,17,0	@EXECUTE THIS CONTROL TO TEST	100016.00 00	000420.00 00	100001.00
		@ABILITY OF PRINTER TO PRINT.			
		@PRINTS ONE LINE OF PRINT INFO.			
@					
PRT2	CW%CD¤,LINE2,51,0	@MF TEST- ALL CHARACTER PRINT.	100037.00 20	001460.00 00	100002.00
		@NO END CODE- 3 LINES OF PRINT.			
@					
PRT3	CW%CD¤,LINE3,31,0	@MF TEST,END CODE TEST-	100122.00 20	000760.00 00	100003.00
		@PRINTS 3 LINES OF PRINT,EACH			
		@IDENTIFIED.			
@					
PRT4	CW%CR¤,BXWC1,1,0	@BX WORD COUNT -1- TEST.-	100161.00 00	000020.00 00	100004.00
		@USES PRINTER TO INDICATE			
		@SUCCESS,PRINTS WDCT1 ON SUCCESS,			
		@WDCT1 FAILURE-ON FAILURE			
@					
PRT4A	CW%CR¤,BXWC2,2,0	@BX WORD COUNT -2- TEST.	100163.00 00	000040.00 00	100005.00
		@USES PRINTER TO INDICATE			
		@SUCCESS,PRINTS-WORD COUNT 2-			
		@ON SUCCESS AND-WORD COUNT 2			
		@FAILURE-ON FAILURE.			
@					
PRT5	CW%CDSC¤,LINE1,17,S&1.	@CHAIN FLAG/MULTIPLE FLAG TEST	100016.00 60	000422.00 07	100006.00
	CW%CDSC¤,LINE2,51,S&1.	@DO ALL ABOVE FUNCTIONS	100037.00 60	001462.00 08	100007.00
	CW%CDSC¤,LINE3,31,S&1.	@WITH CF AND MF SET 1	100122.00 60	000762.00 09	100010.00
	CW%CDSC¤,BXWC1,1,PRT4A		100161.00 60	000022.00 05	100011.00
@					
PRT6	CW%CDSC¤,LINE2,51,S	@SCOPING LOOP-CONTINOUS PRINT	100037.00 60	001462.00 0A	100012.00
@					
PRT7	CW%CDSC¤,LINE3,31,S	@SCOPING LOOP-END CODE PRT	100122.00 60	000762.00 0B	100013.00
@					
@					
@	SELECT REPORT PRINTER TEST				
@					
@					
	@THE PROGRAM LOOPS PRINTING ACCORDING TO THE				
	@SELECT REPORT KEY DEPRESSED.				
@					
@					
@	IF NO KEY IS DEPRESSED THE PROGRAM WILL LOOP				
@	PRINTING ALL DATA FROM THIS TEST.				
@					
@					
PRT8	CW%CDSC¤,CCFC,32,S	@LOOP FOR CARRIAGE	100207.00 60	001002.00 0C	100014.00
		@CONTROL FIELD TESTS.			
@					
@					
@	SUPPRESS POST-SPACING PRINTER TEST				
@					
PRT9	CW%CDSC¤,SPS1,17,S	@LOOP FOR SUPPRESS	100166.00 60	000422.00 0D	100015.00

END OF PRINTER TESTS

```
        @       PRINT DATA
        @
        @
                CNOP
LINE1   %8¤DD%BU,8,8¤,000          @CHAR CONTROL BYTE                           000     100016.00
        %  AZ¤DD%BU,8,8¤,THIS LINE OF PRINT CHECKS THE ABILITY TOZ                     100016.10
        %  AZ¤DD%BU,8,8¤, PRINT. ABCDEFGHIJKLMNOPQRSTUVWXZ                             100023.10
        %  AA¤DD%BU,8,8¤,YZ1234567890A                                                 100027.10
        %AZ¤DD%BU,8,8¤,.-%¤#@&$*/,Z                                                    100030.50
        %16¤DD%BU,8,8¤,1A                                                      032     100032.00
        %  AZ¤DD%BU,8,8¤,  ONLY ONE LINE SHOULD PRINT     Z                            100032.10
        %  AZ¤DD%BU,8,8¤,PRT1   Z                                                      100036.10
                CNOP
        @
        @
LINE2   %8¤DD%BU,8,8¤,000          @CHAR CONTROL BYTE-LINE 1                    000     100037.00
        %  AZ¤DD%BU,8,8¤, ABCDEFGHIJKLMNOPQRSTUVZ                                      100037.10
        %  AT¤DD%BU,8,8¤,WXYZ0123456789 ABCDEFGHIJKLMNOPQT                             100042.00
        %  AQ¤DD%BU,8,8¤,RSTUVWXYZ0123456789 ALL CHARACTEQ                             100046.00
        %  AZ¤DD%BU,8,8¤,R PRINT Z                                                     100052.00
        %AZ¤DD%BU,8,8¤,.-%¤#@&$*/,Z                                                    100053.00
        %16¤DD%BU,8,8¤,1A                                                      032     100054.30
        %  AZ¤DD%BU,8,8¤, THREE LINESZ                                                 100054.40
        %  AZ¤DD%BU,8,8¤, FIRST LINE     Z                                             100056.00
        @
        %8¤DD%BU,8,8¤,000          @CHAR CONTROL BYTE-LINE 2                    000     100060.00
        %  AZ¤DD%BU,8,8¤, ABCDEFGHIJKLMNOPQRSTUVZ                                      100060.10
        %  AT¤DD%BU,8,8¤,WXYZ0123456789 ABCDEFGHIJKLMNOPQT                             100063.00
        %  AQ¤DD%BU,8,8¤,RSTUVWXYZ0123456789 ALL CHARACTEQ                             100067.00
        %  AZ¤DD%BU,8,8¤,R PRINT Z                                                     100073.00
        %AZ¤DD%BU,8,8¤,.-%¤#@&$*/,Z                                                    100074.00
        %16¤DD%BU,8,8¤,1A                                                      032     100075.30
        %  AZ¤DD%BU,8,8¤, THREE LINESZ                                                 100075.40
        %  AZ¤DD%BU,8,8¤, SECOND LINE    Z                                             100077.00
        @
        %8¤DD%BU,8,8¤,000          @CHAR CONTROL BYTE-LINE 3                    000     100101.00
        %  AZ¤DD%BU,8,8¤, ABCDEFGHIJKLMNOPQRSTUVZ                                      100101.10
        %  AT¤DD%BU,8,8¤,WXYZ0123456789 ABCDEFGHIJKLMNOPQT                             100104.00
        %  AQ¤DD%BU,8,8¤,RSTUVWXYZ0123456789 ALL CHARACTEQ                             100110.00
        %  AZ¤DD%BU,8,8¤,R PRINT Z                                                     100114.00
        %AZ¤DD%BU,8,8¤,.-%¤#@&$*/,Z                                                    100115.00
        %16¤DD%BU,8,8¤,1A                                                      032     100116.30
        %  AZ¤DD%BU,8,8¤, THREE LINESZ                                                 100116.40
        %  AZ¤DD%BU,8,8¤, THIRD LINE     Z                                             100120.00
        @
        @
LINE3   %8¤DD%BU,8,8¤,000          @CHAR CONTROL BYTE                           000     100122.00
        %  AZ¤DD%BU,8,8¤,MULTIPLE FLAG EQUAL 1 TEST WITH Z                             100122.10
        %  AZ¤DD%BU,8,8¤,END CODE. THIS IS THE FIRST LINE......Z                       100126.10
        %8¤DD%BU,8,8¤,376          @FIRST END CODE END OF LINE 1                376     100132.70
        %8¤DD%BU,8,8¤,000          @CHAR CONTROL BYTE-2ND LINE                  000     100133.00
        %  AZ¤DD%BU,8,8¤,THIS IS THE SECOND LINE OF MF/END CODE TZ                     100133.10
        %  AZ¤DD%BU,8,8¤,EST. 376 IS USED FOR END CODE..Z                              100140.10
        %8¤DD%BU,8,8¤,376,000                                                  376     100144.00
                                                                              000     100144.10
        %  AZ¤DD%BU,8,8¤,FAILZ                                                         100144.20
                CNOP
        %8¤DD%BU,8,8¤,000          @CHAR CONTROL BYTE-3RD LINE                  000     100145.00
        %  AZ¤DD%BU,8,8¤,THIS IS THE THIRD AND LAST LINE OF END CZ                     100145.10
        %  AZ¤DD%BU,8,8¤,ODE/MF TEST-PRT3-WD CNT 0 STOPS PRINTZ                        100152.10
        %  AZ¤DD%BU,8,8¤, ON THIS LINE......Z                                          100156.60
                CNOP
```

```
                                                                    000    100161.00
BXWC1    %8¤DD%BU,8,8¤,000
         %   AZ¤DD%BU,8,8¤,WDCT1   Z                                       100161.10
         %   AZ¤DD%BU,8,8¤,FAILUREZ                                        100162.00
●
         CNOP
●
BXWC2    %8¤DD%BU,8,8¤,000                                         000    100163.00
         %   AZ¤DD%BU,8,8¤,WORD COUNT -2- Z                                100163.10
         %   AZ¤DD%BU,8,8¤,FAILURE Z                                       100165.00
●
●        SUPPRESS POST SPACING TEST DATA
●
SPS1     %8¤DD%BU,8,8¤,360,000                                    360    100166.00
                                                                  000    100166.10
         %   AZ¤DD%BU,8,8¤,NOW  Z                                         100166.20
         %8¤DD%BU,8,8¤,376                                        376    100166.70
SPS2     %8¤DD%BU,8,8¤,360,000,000,000,000,000                   360    100167.00
                                                                  000    100167.10
                                                                  000    100167.20
                                                                  000    100167.30
                                                                  000    100167.40
                                                                  000    100167.50
                                                                         100167.60
         %   AZ¤DD%BU,8,8¤,IS A SUPPZ
         %8¤DD%BU,8,8¤,376                                        376    100170.70
SPS3     %8¤DD%BU,8,8¤,360,000,000,000,000,000,0J0               360    100171.00
                                                                  000    100171.10
                                                                  000    100171.20
                                                                  000    100171.30
                                                                  000    100171.40
                                                                  000    100171.50
                                                                  000    100171.60
         DD%BU,64,8¤,0                     00000000000000000000   100171.70
         %   AZ¤DD%BU,8,8¤,RESS POZ                                       100172.70
         %8¤DD%BU,8,8¤,376,000                                    376    100173.60
                                                                  000    100173.70
SPS4     %8¤DD%BU,8,8¤,360,000,000,000,000,000                   360    100174.00
                                                                  000    100174.10
                                                                  000    100174.20
                                                                  000    100174.30
                                                                  000    100174.40
                                                                  000    100174.50
         DD%BU,64,8¤,0                     00000000000000000000   100174.60
         DD%BU,64,8¤,0                     00000000000000000000   100175.60
         %   AZ¤DD%BU,8,8¤,ST SPACING T   Z                              100176.60
         %8¤DD%BU,8,8¤,376,000,000,000                            376    100200.40
                                                                  000    100200.50
                                                                  000    100200.60
                                                                  000    100200.70
SPS5     %8¤DD%BU,8,8¤,000                                        000    100201.00
         DD%BU,64,8¤,0                     00000000000000000000   100201.10
         DD%BU,64,8¤,0                     00000000000000000000   100202.10
         DD%BU,64,8¤,0                     00000000000000000000   100203.10
         DD%BU,64,8¤,0                     00000000000000000000   100204.10
         %   AZ¤DD%BU,8,8¤,EST LOOP..Z                                    100205.10
         %8¤DD%BU,8,8¤,376                                        376    100206.30
         CNOP                              0.30 00                        100206.40
●
●        SELECT REPORT TEST DATA
●
CCFC     %8¤DD%BU,8,8¤,341,000                                    341    100207.00
                                                                  000    100207.10
         %   AZ¤DD%BU,8,8¤,THIS LINE SHOULD BE PRINTED IF SELECT Z        100207.20
         %   AZ¤DD%BU,8,8¤,REPORT 1 IS DEPRESSED..Z                       100214.00
         %8¤DD%BU,8,8¤,376                                        376    100216.70
         %8¤DD%BU,8,8¤,342,000                                    342    100217.00
```

```
%   AZ¤DD%BU,8,8¤,THIS LINE SHOULD BE PRINTED IF SELECT Z     000     100217.10
%   AZ¤DD%BU,8,8¤,REPORT 2 IS DEPRESSED..Z                            100217.20
                                                                     100224.00
%8¤DD%BU,8,8¤,376                                             376     100226.70
%8¤DD%BU,8,8¤,344,000                                         344     100227.00
                                                             000     100227.10
%   AZ¤DD%BU,8,8¤,THIS LINE SHOULD BE PRINTED IF SELECT Z            100227.20
%   AZ¤DD%BU,8,8¤,REPORT 3 IS DEPRESSED..Z                           100234.00
%8¤DD%BU,8,8¤,376                                             376     100236.70
%8¤DD%BU,8,8¤,350,000                                         350     100237.00
                                                             000     100237.10
%   AZ¤DD%BU,8,8¤,THIS LINE SHOULD BE PRINTED IF SELECT Z            100237.20
%   AZ¤DD%BU,8,8¤,REPORT 4 IS DEPRESSED..Z                           100244.00
%8¤DD%BU,8,8¤,376                                             376     100246.70
```

```
@          CARD READER TESTS
@
@
@          *****OPERATOR*****
@
@
@           PLACE THE READER TEST DECK IN CARD REAJER
@          HOPPER AND MAKE READER READY. THE FIRST CONTROL
@          WORD SEQUENCE WILL READ IN THE ENTIRE TEST DECK.
@
@
@           ....IF IT IS DESIRED TO RUN EACH TEST SEPARATELY,
@          THE ENTIRE CONTROL WORD SEQUENCE IS REPEATED WITHOUT
@          CHAIN FLAGS. RUN THIS SEQUENCE ONLY IF CHAIN FLAG
@          OPERATION IS QUESTIONABLE.ADDITIONAL TESTS ARE
@          INCLUDED,SEPARATE TO THE FIRST AND SECOND CW SEQUENCE,
@          WHICH CHECK VARIOUS OPTIONS OF READER SUCH AS SCOPING
@          FEATURES AND ECC TESTS...........
@
@
@          ONE TEST DECK IS AVAILABLE FOR THE READER TESTS.
@
@          TEST DECK ONE CONTAINS MOSTLY IQS DATA WHICH ARE
@          CHECKED BY EXECUTING CHKRDR CONTROL WORD SEQUENCE
@          AND PRINTING RESULTS ON CHAIN PRINTER. THE IQS DATA
@          WAS CHOSEN TO BE SELF EXPLANATORY. THE LAST WORD OF
@          EACH CARD IS IDENTIFIED AS DESCRIBED BEFORE IN BOTH DECKS
@
@
@          THE PUNCH TEST OUTPUT CAN ALSO BE USED FOR CHECKING THE
@          CARD READER.
@
@
@
RDR        CW%CDSC¤,CARD1,15,S&1.0   @FIRST CARD-IDENTIFIED        100313.00 60 000362.00 A8    100247.00
@
           CW%CDSC¤,CARD2,1,S&1.0    @SECOND CARD-WORD COUNT 1 TEST.  100332.00 60 000022.00 A9    100250.00
                                     @SHOULD SKIP TO THIRD CARD.
@
           CW%CDSC¤,CARD3,2,S&1.0    @THIRD CARD-WORD COUNT 2 TEST.   100351.00 60 000042.00 AA    100251.00
                                     @SHOULD SKIP TO FOURTH CARD.
@
           CW%SCCR¤,CARD4,4,S&1.0    @FIRST 4 WORDS OF CARD4 SHOULD BE  100370.00 50 000102.00 AB    100252.00
                                     @SKIPPED,WITH SKIP FLAG.
@
           CW%CDSC¤,CARD4&4.0,11,S&1.0  @READ IN REMAINDER OF CARD 4.   100374.00 60 000262.00 AC    100253.00
@
           CW%CDSC¤,CARD5,45,S&1.0   @READ IN 3 CARDS-MF READ.     100407.00 60 001322.00 AD    100254.00
@
           CW%CDSC¤,CARD8,150,S&1.0  @LONG READ-10 CARDS.          100464.00 60 004542.00 AE    100255.00
@
           CW%CR¤,CARD18,30,0        @SHOULD ONLY READ ONE CARD.   100712.00 00 000740.00 00    100256.00
```

```
@
@
@
@       THE RESULTS OF READER TEST CAN EASILY BE DETERMINED BY
@       TWO MEANS.
@
@           1. EXECUTE CHKRDR CNT WDS AND PRINT RESULTS ON
@              CHAIN PRINTER. OR.
@           2. MANUALY FETCH READ IN DATA...THE LAST WORD
@              OF EACH CARD HAS ITS OCTAL CARD NUMBER
@              IN THE LAST 8 BIT POSITIONS.WHERE FULL CARD
@              WAS NOT READ.COMPARE WITH IQS STATEMENTS.
@
@
@       THE ABOVE CONTROL WORD SEQUENCE IS NOW REPEATED
@       WITHOUT CHAIN FLAGS
@
@
RDR1    CW%CR¤,CARD1,15,0          @FIRST CARD                     100313.00 00 000360.00 00    100257.00
@
RDR2    CW%CR¤,CARD2,1,0           @SECOND CARD-WORD COUNT 1 TEST. 100332.00 00 000020.00 00    100260.00
                                   @SHOULD SKIP TO THIRD CARD
@
RDR3    CW%CR¤,CARD3,2,0           @THIRD CARD-WORD COUNT 2 TEST.  100351.00 00 000040.00 00    100261.00
RDR4                               @SHOULD SKIP TO FOURTH CARD.      0.00 00 000000.00 00       100262.00
@
RDR5    CW%SCR¤,CARD4,4,0          @SKIP FIRST 4 WORDS WITH SKIP FLAG. 100370.00 10 000100.00 00  100263.00
@
RDR6    CW%CD¤,CARD4&4.0,11,0      @READ-IN REMAINDER OF CARD 4.   100374.00 20 000260.00 00    100264.00
RDR7    CW%CD¤,CARD5,45,0          @THREE CARD MF READ.            100407.00 20 001320.00 00    100265.00
@
RDR8    CW%CD¤,CARD8,150,0         @LONG READ- 10 CARDS.           100464.00 20 004540.00 00    100266.00
@
RDR9    CW%CR¤,CARD18,30,0         @SHOULD ONLY READ ONE CARD.     100712.00 00 000740.00 00    100267.00
@
@
@  MORE TESTS WILL BE ADDED AT A LATER DATE
@
@
@
@       THE FOLLOWING GROUP OF CONTROL WORDS PRINT
@       READ IN DATA OF READER TEST. PROVISIONS ARE
@       INCLUDED TO PRINT FAILURE INDICATIONS OF
@       ALL TESTS.FOR EXPLANATION.REFER TO PROGRAM
@       DESCRIPTION WRITE-UP...
@
CHKRDR  CW%CDSC¤,CARD1,15,$&1.0                                   100313.00 60 000362.00 B9    100270.00
        CW%CDSC¤,CARD2,15,$&1.0                                   100332.00 60 000362.00 BA    100271.00
        CW%CDSC¤,CARD3,15,$&1.0                                   100351.00 60 000362.00 BB    100272.00
        CW%CDSC¤,CARD4,15,$&1.0                                   100370.00 60 000362.00 BC    100273.00
        CW%CDSC¤,CARD5,15,$&1.0                                   100407.00 60 000362.00 BD    100274.00
        CW%CDSC¤,CARD6,15,$&1.0                                   100426.00 60 000362.00 BE    100275.00
        CW%CDSC¤,CARD7,15,$&1.0                                   100445.00 60 000362.00 BF    100276.00
        CW%CDSC¤,CARD8,15,$&1.0                                   100464.00 60 000362.00 C0    100277.00
        CW%CDSC¤,CARD9,15,$&1.0                                   100503.00 60 000362.00 C1    100300.00
        CW%CDSC¤,CARD10,15,$&1.0                                  100522.00 60 000362.00 C2    100301.00
        CW%CDSC¤,CARD11,15,$&1.0                                  100541.00 60 000362.00 C3    100302.00
        CW%CDSC¤,CARD12,15,$&1.0                                  100560.00 60 000362.00 C4    100303.00
        CW%CDSC¤,CARD13,15,$&1.0                                  100577.00 60 000362.00 C5    100304.00
        CW%CDSC¤,CARD14,15,$&1.0                                  100616.00 60 000362.00 C6    100305.00
        CW%CDSC¤,CARD15,15,$&1.0                                  100635.00 60 000362.00 C7    100306.00
```

```
CW%CDSC¤,CARD16,15,$&1.0          100654.00 60 000362.00 C8    100307.00
CW%CDSC¤,CARD17,15,$&1.0          100673.00 60 000362.00 C9    100310.00
CW%CDSC¤,CARD18,15,$&1.0          100712.00 60 000362.00 CA    100311.00
CW%CD¤,CARD19,15,0               100731.00 20 000360.00 00    100312.00
```

```
         @
         @      READ IN AREA FOR RDR AND RDR1-RDR9 TESTS
         @
         @
                CNOP
         @
CARD1    DR%BU,64,8□,14                                          16.00              100313.00
         DR%BU,64,8□,1           @CARD 1 IDENTITY                 1.00              100331.00
         @
CARD2    DR%BU,64,8□,1           @WORD COUNT 1 DATA               1.00              100332.00
         DR%BU,64,8□,14          @THIS AREA SHOULD BE BLANK      16.00              100333.00
         @
CARD3    DR%BU,64,8□,2           @WORD COUNT 2 DATA               2.00              100351.00
         DR%BU,64,8□,13          @THIS AREA SHOULD BE BLANK      15.00              100353.00
         @
CARD4    %  AZ□DD%BU,8,8□, THIS IS THE SKIP READ AREA.....Z                         100370.00
         DR%BU,64,8□,10          @CARD 4 DATA                    12.00              100374.00
         DR%BU,64,8□,1           @CARD 4 IDENTITY                 1.00              100406.00
         @
CARD5    DR%BU,64,8□,14          @CARD 5 DATA                    16.00              100407.00
         DR%BU,64,8□,1           @CARD 5 IDENTITY                 1.00              100425.00
         @
CARD6    DR%BU,64,8□,14          @CARD 6 DATA                    16.00              100426.00
         DR%BU,64,8□,1           @CARD 6 IDENTITY                 1.00              100444.00
         @
CARD7    DR%BU,64,8□,14          @CARD 7 DATA                    16.00              100445.00
         DR%BU,64,8□,1           @CARD 7 IDENTITY                 1.00              100463.00
         @
CARD8    DR%BU,64,8□,14          @CARD 8 DATA                    16.00              100464.00
         DR%BU,64,8□,1           @CARD 8 IDENTITY %OCTAL□         1.00              100502.00
         @
CARD9    DR%BU,64,8□,14          @CARD 9 DATA                    16.00              100503.00
         DR%BU,64,8□,1           @CARD 9 IDENTITY %OCTAL□         1.00              100521.00
         @
CARD10   DR%BU,64,8□,14                                         16.00              100522.00
         DR%BU,64,8□,1           @CARD 10 IDENTITY %OCTAL□        1.00              100540.00
         @
CARD11   DR%BU,64,8□,14                                         16.00              100541.00
         DR%BU,64,8□,1           @CARD 11 IDENTITY %OCTAL□        1.00              100557.00
         @
CARD12   DR%BU,64,8□,14                                         16.00              100560.00
         DR%BU,64,8□,1           @CARD 12 IDENTITY %OCTAL□        1.00              100576.00
         @
CARD13   DR%BU,64,8□,14                                         16.00              100577.00
         DR%BU,64,8□,1           @CARD 13 IDENTITY               1.00              100615.00
         @
CARD14   DR%BU,64,8□,14                                         16.00              100616.00
         DR%BU,64,8□,1           @CARD 14 IDENTITY               1.00              100634.00
         @
CARD15   DR%BU,64,8□,14                                         16.00              100635.00
         DR%BU,64,8□,1           @CARD 15 IDENTITY               1.00              100653.00
         @
CARD16   DR%BU,64,8□,14                                         16.00              100654.00
         DR%BU,64,8□,1           @CARD 16 IDENTITY               1.00              100672.00
         @
CARD17   DR%BU,64,8□,14                                         16.00              100673.00
         DR%BU,64,8□,1           @CARD 17 IDENTITY               1.00              100711.00
         @
CARD18   DR%BU,64,8□,14                                         16.00              100712.00
         DR%BU,64,8□,1           @CARD 18 IDENTITY               1.00              100730.00
         @
CARD19   DR%BU,64,8□,15          @CARD 19 SHOULD NOT HAVE READ   17.00              100731.00
```

@   729-IV- TAPE TESTS
@
@   BOTH DATA AND TAPE CONTROL ARE CHECKED IN THESE
@   TESTS. INSTRUCTIONS ARE INCLUDED WITHIN THE TESTS
@   INDICATING THE TYPE OF CONTROL INSTRUCTION
@   NEEDED. ITS CODE FOR MANUAL EXECUTION. AND THE
@   TIME OF WHICH IT SHOULD BE EXECUTED. EACH
@   STEP OF A PARTICULAR TEST IS NUMBERED BY ORDER
@   OF EXECUTION.
@
@
@   TEST 1.- SIMPLE DATA AND REWIND.
@   MANUALLY LOCATE DRIVE.
@   1.-REWIND TAPE. CONTROL CODE 01011110
@   2.-EXECUTE FOLLOWING CONTROL WORD-WRITE
@
    CW%CR¤,RCRDA,12,0   101004.00 00 000300.00 00   100750.00
@
@   3.-REWIND TAPE. CONTROL CODE 01011110
@   4.-EXECUTE FOLLOWING CONTROL WORD-READ
@
    CW%CR¤,TPRD1,12,0   101140.00 00 000300.00 00   100751.00
@
@   TO CHECK DATA. CHECK READ IN AREA MANUALLY.
@   DATA IS IN A SIMPLE FORM. AN ALL ONES BYTE
@   SHIFTS CONTINUALY TO THE LEFT ONE FULL BYTE
@   FOR EACH WORD READ UNTILL AN ALL ZEROS WORD
@   IS REACHED. FOLLOWING THIS IS AN ALL ONES
@   WORDS, A 10101.....WORD, AND A 01010.....WORD.
@
@

```
●      TEST 2.- DATA AND BACKSPACE TEST
●              TEST CHECKED BY PRINTING RESULTS
●              ON CHAIN PRINTER.
●
●      1.-LOCATE DESIRED DRIVE.
●      2.-REWIND TAPE. CONTROL CODE 01011110
●      3.-EXECUTE FOLLOWING GROUP OF CONTROL WORDS-WRITE
●
       CW%CDSC□,RCRD1,10,S&1.0                          101020.00 60 000242.01 EB      100752.00
       CW%CDSC□,RCRD2,15,S&1.0                          101032.00 60 000362.01 EC      100753.00
       CW%CR□,RCRD3,5,0                                 101051.00 00 000120.00 00      100754.00
●
●      4.-BACKSPACE TAPE. CONTROL CODE 01111110
●      5.-EXECUTE FOLLOWING CONTROL WORD-WRITE
●
       CW%CDSC□,RCRD4,5,S&1.0                           101056.00 60 000122.01 EE      100755.00
       CW%CR□,RCRD5,10,0                                101063.00 00 000240.00 00      100756.00
●
●      6.-REWIND TAPE. CONTROL CODE 01011110
●      7.-EXECUTE FOLLOWING CONTROL WORDS-READ.
●
       CW%CDSC□,TPRD2,10,S&1.0                          101154.00 60 000242.01 F0      100757.00
       CW%CDSC□,TPRD3,15,S&1.0                          101166.00 60 000362.01 F1      100760.00
       CW%CDSC□,TPRD4,5,S&1.0                           101205.00 60 000122.01 F2      100761.00
       CW%CR□,TPRD5,10,S&1.0                            101212.00 00 000242.01 F3      100762.00
●
●      8.-TO CHECK TESTS, USE ABOVE SET OF CONTROL WORDS AGAIN
●         ONLY THIS TIME, PRINT READ IN AREA O.I PRINTER.
●
●
```

@   TEST 3. TAPE MARK RECOGNITION TEST.
@
@   1.-LOCATE DESIRED DRIVE.
@   2.-REWIND TAPE. CONTROL CODE 01011110
@   3.-EXECUTE FOLLOWING CONTROL WORD-WRITE
@

        CW%CD¤,RCRD10,5,$&1.0   @SHOULD NOT CHAIN.   101075.00 20 000122.01 F4   100763.00
        CW%CR¤,RCRD10,5,0   101075.00 00 000120.00 00   100764.00
@
@
@   4.-WRITE A TAPE MARK. CONTROL CODE 01001111
@   5.-EXECUTE FOLLOWING CONTROL WORD-WRITE.
@

        CW%CR¤,RCRD11,5,0   101102.00 00 000120.00 00   100765.00

@
@   6.-REWIND TAPE. CONTROL CODE 01011110
@   7.-EXECUTE FOLLOWING CONTROL WORD-ONLY ONE RECORD
@   -SHOULD READ. TAPE MARK SHOULD CAUSE DISCONNET AT 6TH
@   -WORD.
@

        CW%CD¤,TPRD6,15,0   101224.00 20 000360.00 00   100766.00

@
@   8.-EXECUTE ABOVE CW WITH PRINTER WRITE TO OBSERVE RESULTS.
@
@

@   TEST 4.-BACKSPACE FILE TEST.
@
@   1.-LOCATE DESIRED DRIVE.
@   2.-REWIND TAPE. CONTROL CODE 01011110
@   3.-EXECUTE FOLLOWING CONTROL WORD-WRITE
@
        CW%CD¤,RCRD12,5,0   101107.00 20 000120.00 00   100767.00
@
@   4.-WRITE A TAPE MARK. CONTROL CODE 01001111
@   5.-EXECUTE FOLLOWING CW - WRITE
@
        CW%CD¤,RCRD13,5,0   101114.00 20 000120.00 00   100770.00
@
@   6.-BACKSPACE FILE. CONTROL CODE 01111111
@   7.-EXECUTE FOLLOWING CW-WRITE
@
        CW%CD¤,RCRD14,5,0   101121.00 20 000120.00 00   100771.00
@
@   8.-REWIND TAPE. CONTROL CODE 01011110
@   9.-EXECUTE FOLLOWING CONTROL WORDS-READ.
@
        CW%CD¤,TPRD7,10,0   101243.00 20 000240.00 00   100772.00
@
@
@   10.-EXECUTE FOLLOWING CW ON-PRINTER--PRINT,
@
        CW%CD¤,TPRD7,10,0   101243.00 20 000240.00 00   100773.00
@
@

```
                    TEST 5 SPACE FILE TEST

                    1.-LOCATE DESIRED DRIVE.
                    2.-REWIND TAPE. CONTROL CODE 01011110
                    3.-EXECUTE FOLLOWING CONTROL WORD-WRITE

                    CW%CD¤,RCRD15,5,0                              101126.00 20 000120.00 00      100774.00

                    4.-WRITE A TAPE MARK. CONTROL CODE 01001111
                    5.-REWIND TAPE. CONTROL CODE 01011110
                    6.-SPACE FILE. CONTROL CODE 00111111
                    7.-EXECUTE FOLLOWING CW WRITE.

                    CW%CD¤,RCRD16,5,0                              101133.00 20 000120.00 00      100775.00

                    8.-REWIND TAPE. CONTROL CODE 01011110
                    9.-EXECUTE FOLLOWING CWS-READ.

                    CW%CDSC¤,TPRD8,5,S&1.0                         101262.00 60 000122.01 FF      100776.00
                    CW%CD¤,TPRD8&5.0,1.0         @SKIP TAPE MARK   101267.00 20 000020.00 00      100777.00

                    9A.-EXECUTE FOLLOWING CW-READ

                    CW%CD¤,TPRD8&5.0,5,0                           101267.00 20 000120.00 00      101000.00

                    10.-EXECUTE FOLLOWING CW ON PRINTER. -WRITE-

                    CW%CR¤,TPRD8&5.0,5,0                           101267.00 00 000120.00 00      101001.00
```

```
@       THE FOLLOWING GROUP OF CONTROL WORDS REPRODUCE
@       THIS PROGRAM USING TAPES AS A STORAGE DEVICE.
@
@       1.-LOCATE DESIRED DRIVE
@       2.-REWIND TAPE. CONTROL CODE 01011110
@       3.-EXECUTE FOLLOWING CONTROL WORDS-WRITE
@
        CW%CCR¤,IPLCW+1,$&1.0              101003.00 40 000022.02 03    101002.00
IPLCW   CW%CD¤,START,END-START&1.0,0       100000.00 20 070740.00 00    101003.00
@
@       4.-REWIND TAPE. CONTROL CODE 01011110
@
@       TAPE CAN BE USED AS A PROGRAM TAPE.
@       IPL FROM THIS TAPE WILL PRODUCE SAME DATA AS IF
@       BX-0-WERE LOADED FROM CARDS. TO TRUELY TEST TAPE,
@       CLEAR MEMORY AND IPL. RUN PRINTER TEST FOR A
@       DATA TEST.
@
@       ****TO CREATE A NEW BINARY DECK, USE ABOVE
@       CONTROL WORDS ON A PUNCH WRITE.****
        CNOP
```

```
@       TAPE TESTS DATA
@
@
@       TEST 1.
@
RCRDA   %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,377                           000     101004.00
                                                                                000     101004.10
                                                                                000     101004.20
                                                                                000     101004.30
                                                                                000     101004.40
                                                                                000     101004.50
                                                                                000     101004.60
                                                                                377     101004.70
        %8¤DD%BU,8,8¤,000,000,000,000,000,000,377,000                           000     101005.00
                                                                                000     101005.10
                                                                                000     101005.20
                                                                                000     101005.30
                                                                                000     101005.40
                                                                                000     101005.50
                                                                                377     101005.60
        %8¤DD%BU,8,8¤,000,000,000,000,000,377,000,000                           000     101005.70
                                                                                000     101006.00
                                                                                000     101006.10
                                                                                000     101006.20
                                                                                000     101006.30
                                                                                000     101006.40
                                                                                377     101006.50
                                                                                000     101006.60
        %8¤DD%BU,8,8¤,000,000,000,000,377,000,000,000                           000     101006.70
                                                                                000     101007.00
                                                                                000     101007.10
                                                                                000     101007.20
                                                                                000     101007.30
                                                                                377     101007.40
                                                                                000     101007.50
                                                                                000     101007.60
        %8¤DD%BU,8,8¤,000,000,000,377,000,000,000,000                           000     101007.70
                                                                                000     101010.00
                                                                                000     101010.10
                                                                                000     101010.20
                                                                                377     101010.30
                                                                                000     101010.40
                                                                                000     101010.50
                                                                                000     101010.60
        %8¤DD%BU,8,8¤,000,000,377,000,000,000,000,000                           000     101010.70
                                                                                000     101011.00
                                                                                000     101011.10
                                                                                377     101011.20
                                                                                000     101011.30
                                                                                000     101011.40
                                                                                000     101011.50
                                                                                000     101011.60
        %8¤DD%BU,8,8¤,000,377,000,000,000,000,000,000                           000     101011.70
                                                                                000     101012.00
                                                                                377     101012.10
                                                                                000     101012.20
                                                                                000     101012.30
                                                                                000     101012.40
                                                                                000     101012.50
                                                                                000     101012.60
        %8¤DD%BU,8,8¤,377,000,000,000,000,000,000,000                           000     101012.70
                                                                                377     101013.00
```

```
                                                                              000     101013.10
                                                                              000     101013.20
                                                                              000     101013.30
                                                                              000     101013.40
                                                                              000     101013.50
                                                                              000     101013.60
                                                                              000     101013.70
        %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,000                         000     101014.00
                                                                              000     101014.10
                                                                              000     101014.20
                                                                              000     101014.30
                                                                              000     101014.40
                                                                              000     101014.50
                                                                              000     101014.60
                                                                              000     101014.70
        %8¤DD%BU,8,8¤,377,377,377,377,377,377,377,377                         377     101015.00
                                                                              377     101015.10
                                                                              377     101015.20
                                                                              377     101015.30
                                                                              377     101015.40
                                                                              377     101015.50
                                                                              377     101015.60
                                                                              377     101015.70
        %8¤DD%BU,64,8¤,1252525252525252525252        1252525252525252525252  101016.00
        %8¤DD%BU,64,8¤,0525252525252525252525        0525252525252525252525  101017.00
@
@
@         TEST 2.
@
RCRD1   %8¤DD%BU,8,8¤,000       @CHAR CONTROL BYTE FOR PRINTING.              000     101020.00
        %  AZ¤DD%BU,8,8¤,TEST 2. DATA AND BACKSPACE TESTZ                             101020.10
        %  AZ¤DD%BU,8,8¤,.THIS IS RECORD 1 - TEST TWO....Z                            101024.00
        %  AZ¤DD%BU,8,8¤,10 WORDS, CDSC..Z                                            101030.00
@
@
RCRD2   %8¤DD%BU,8,8¤,000       @CHAR CONTROL BYTE FOR PRINTING.              000     101032.00
        %  AZ¤DD%BU,8,8¤,TEST 2. RECORD 2 - 15 WORDS, CDZ                             101032.10
        %  AZ¤DD%BU,8,8¤,SC...DATA FOLLOWS----ABCDEFGHIJKLZ                           101036.00
        %  AA¤DD%BU,8,8¤,MNOPQRSTUVWXYZ0123456789--------A                            101042.00
        %  AZ¤DD%BU,8,8¤,RECORD 3 IS BCKSP TEST. Z                                    101046.00
@
@
RCRD3   %8¤DD%BU,8,8¤,000       @CHAR CONTROL BYTE FOR PRINTING.              000     101051.00
        %  AZ¤DD%BU,8,8¤,IF THIS PRINTS, BACKSPACE FAILEZ                             101051.10
        %  AZ¤DD%BU,8,8¤,D.......Z                                                    101055.00
@
@
RCRD4   %8¤DD%BU,8,8¤,000       @CHAR CONTROL BYTE FOR PRINTING.              000     101056.00
        %  AZ¤DD%BU,8,8¤,TEST 2. BACKSPACE WORKED IF THIZ                             101056.10
        %  AZ¤DD%BU,8,8¤,S LINE 3Z                                                    101062.00
@
@
RCRD5   %8¤DD%BU,8,8¤,000       @CHAR CONTROL BYTE FOR PRINTING.              000     101063.00
        %  AZ¤DD%BU,8,8¤,TEST 2. RECORD 4. 10 WORDS, CR.Z                             101063.10
        %  AZ¤DD%BU,8,8¤, THIS IS THE LAST RECORD OF TESTZ                            101067.00
        %  AZ¤DD%BU,8,8¤, 2..XXXXXXXXXXXXZ                                            101073.00
@
@         TEST 3.
@
@
RCRD10  %8¤DD%BU,8,8¤,000       @CHAR CONTROL BYTE FOR PRINTING.              000     101075.00
        %  AZ¤DD%BU,8,8¤,TEST 3. TAPE MARK RECOGNITION.RZ                             101075.10
        %  AZ¤DD%BU,8,8¤,ECORD 1.Z                                                    101101.00
@
@
RCRD11  %  AZ¤DD%BU,8,8¤,IF THIS PRINTS,TAPE MARK FAILED.Z                            101102.00
```

```
%  AZ¤DD%BU,8,8¤,XXXXXXXXZ                                              101106.00

@
@        TEST4
@
RCRD12  %8¤DD%BU,8,8¤,000        @CHAR CONTROL BYTE FOR PRINTING.    000   101107.00
        %  AZ¤DD%BU,8,8¤,TEST 4.BACKSPACE FILE TEST. RECZ                   101107.10
        %  AZ¤DD%BU,8,8¤,ORD 1...Z                                          101113.00
@
@
RCRD13  %8¤DD%BU,8,8¤,000        @CHAR CONTROL BYTE FOR PRINTING.    000   101114.00
        %  AZ¤DD%BU,8,8¤,IF THIS PRINTS,BACKSPACE FILE FZ                   101114.10
        %  AZ¤DD%BU,8,8¤,AILED...Z                                          101120.00
@
@
RCRD14  %8¤DD%BU,8,8¤,000        @CHAR CONTROL BYTE FOR PRINTING.    000   101121.00
        %  AZ¤DD%BU,8,8¤,TEST 4.BACKSPACE FILE TEST PASSZ                   101121.10
        %  AZ¤DD%BU,8,8¤,ED......Z                                          101125.00
@
@
@        TEST 5.
@
@
RCRD15  %8¤DD%BU,8,8¤,000        @CHAR CONTROL BYTE FOR PRINTING.    000   101126.00
        %  AZ¤DD%BU,8,8¤,SPACE FILE,TEST 5, FAILED.XXXXXZ                   101126.10
        %  AZ¤DD%BU,8,8¤,XXXXXXXXZ                                          101132.00
@
@
RCRD16  %8¤DD%BU,8,8¤,000        @CHAR CONTROL BYTE FOR PRINTING.    000   101133.00
        %  AZ¤DD%BU,8,8¤,TEST 5. SPACE FILE TEST PASSED.Z                   101133.10
        %  AZ¤DD%BU,8,8¤,.........Z                                         101137.00
@
@
@
```

```
@
@          TAPE TESTS READ IN AREA
@
@
@          TEST 1.
@
@
TPRD1     DR%BU,64,8□,8          @8 WORDS-ALL ONES BYTES STARTS AT       10.00              101140.00
                                 @BYTE 7 AND SHIFTS LEFT ONE BYTE
                                 @FOR EACH WORD.
          DR%BU,64,8□,2          @ALL ZEROS WORD                          2.00              101150.00
                                 @ALL ONES WORD
          DR%BU,64,8□,1          @10101....WORD                           1.00              101152.00
          DR%BU,64,8□,1          @01010....WORD                           1.00              101153.00
@
@
@          TEST 2.
@
TPRD2     DR%BU,64,8□,10                                                 12.00              101154.00
TPRD3     DR%BU,64,8□,15                                                 17.00              101166.00
TPRD4     DR%BU,64,8□,5                                                   5.00              101205.00
TPRD5     DR%BU,64,8□,10                                                 12.00              101212.00
@
@
@          TEST 3.
@
@
TPRD6     DR%BU,64,8□,15                                                 17.00              101224.00
@
@
@          TEST 4.
@
@
TPRD7     DR%BU,64,8□,15                                                 17.00              101243.00
@
@
@          TEST 5.
@
TPRD8     DR%BU,64,8□,10                                                 12.00              101262.00
```

```
@
@       CONSOLE TEST
@
@
@       THIS TEST TESTS READ AND WRITE OPERATION
@       OF THE CONSOLE. CONTROL WORDS AND CONSTANS
@       ARE PROVIDED FOR WRITE OPERATIONS- CONTROL
@       WORDS AND RESERVED LOCATIONS FOR READ OPERATIONS
@
@
@       TEST ONE-TESTS WRITE OPERATION ON CNSL LTS
@
@               @TESTING WORD ONE
@
CNSL1   CW%CR¤,WORD1,1,0        @WORD ONE-BYTE NUMBER      101356.00 00 000020.00 00    101274.00
        CW%CR¤,WORD1&1.,1,0     @WORD ONE-ALL ONES         101357.00 00 000020.00 00    101275.00
        CW%CR¤,WORD1&2.,1,0     @WORD ONE-ALL ZEROS        101360.00 00 000020.00 00    101276.00
        CW%CR¤,WORD1&3.,1,0     @WORD ONE-ONES AND ZEROS   101361.00 00 000020.00 00    101277.00
@                               @         BYTE PATTERN
@
@
@               @TESTING WORD TWO
@
        CW%CR¤,WORD1&3.,2,0     @WORD TWO-EIGHTS           101361.00 00 000040.00 00    101300.00
        CW%CR¤,WORD1&4.,2,0     @WORD TWO-SEVENS           101362.00 00 000040.00 00    101301.00
        CW%CR¤,WORD1&1.,2,0     @WORD TWO-BLANK            101357.00 00 000040.00 00    101302.00
@
@
@               @TESTING WORD THREE
@
        CW%CR¤,WORD1-1.,3,0     @WORD THREE-ALL ONES       101355.00 00 000060.00 00    101303.00
@
@
@       TEST TWO-TESTS CF ON A WRITE OPERATION
@
@               @CHAINING TWO WORDS
CNSL2   CW%CCR¤,WORD1&3.,1,CNSL2&1.  @WORD ONE-BYTE PATTERN  101361.00 40 000022.02 C5    101304.00
        CW%CR¤,WORD1&4.,1,0     @WORD TWO-ALL EIGHTS       101362.00 00 000020.00 00    101305.00
@
@
@               @CHAINING THREE WORDS
@
        CW%CCR¤,WORD1&1.,1,CNSL2&3.  @WORD ONE-ALL ONES     101357.00 40 000022.02 C7    101306.00
        CW%CCR¤,WORD1&4.,1,CNSL2&4.  @WORD TWO-ALL EIGHTS   101362.00 40 000022.02 C8    101307.00
        CW%CR¤,WORD1&2.,1,0     @WORD THREE-ALL ZEROS      101360.00 00 000020.00 00    101310.00
@
@
@       TEST THREE-TESTS READ OPERATION FROM CNSL SWITCHES
@
CNSL3   CW%CR¤,WORD2,1,0        @READ ONE WORD→DATA        101364.00 00 000020.00 00    101311.00
                               @WILL BE IN WORD 2
        CW%CR¤,WORD2&1.0,2,0   @READ TWO WORDS-DATA       101365.00 00 000040.00 00    101312.00
                               @WILL BEGIN AT WORD 2&1.0
        CW%CR¤,WORD2&3.0,3,0   @READ THREE WORDS-DATA     101367.00 00 000060.00 00    101313.00
                               @WILL BEGIN AT WORD 2&3.0
@
@       USE THE SAME CONTROL WORDS AND WRITE
@       OUT DATA FOR CHECKING.
@
@
@
@       TEST FOUR-TESTS READ OPERATION FROM
                               @CNSL SW AND CF
```

```
@
@       REPEAT THIS TEST USING SEVERAL ANALOG TO DIGITAL
@       POT SETTINGS....
@
CNSL4   CW%CCR¤,WORD3,1,CNSL4&1   @CHAINING TWO WORD                  101372.00 40 000022.02 CD    101314.00
        CW%CR¤,WORD3&1,,2,0                                          101373.00 00 000040.00 00    101315.00
@
        CW%CCR¤,WORD4,1,CNSL4&3.0  @CHAINING THREE WORDS             101375.00 40 000022.02 CF    101316.00
        CW%CCR¤,WORD4&1.0,1,CNSL4&4.0  @DATA WILL BEGIN AT WORD 4    101376.00 40 000022.02 D0    101317.00
        CW%CR¤,WORD4&2.0,1,0                                         101377.00 00 000020.00 00    101320.00
@
@       USE THE SAME CONTROL WORDS AND WRITE
@       OUT DATA FOR CHECKING.
@
```

```
@
@                TEST FIVE-TESTS TYPEWRITER WRITE OPERATION
@                          @AND END CODE
@
CNSL5    CW%CR¤,TYPW1-3.0,4.0      @TYPES ONE WORD              101400.00 00 000100.00 00    101321.00
                                   @WHICH IS,CR,TYP TST
         CW%CR¤,TYPW2-3.0,5.0      @END CODE TEST-TYPE          101405.00 00 000120.00 00    101322.00
                                   @TWO WORDS AND END
                                   @WORDS ARE, CR,END
                                   @CODE TEST,END
@
         CW%CR¤,TYPW3-3.0,14.0     @TYPE ONE LINE               101413.00 00 000340.00 00    101323.00
                                   @WHICH IS-
                                   @CR, A B C D E F G
                                   @H I J K L M N O
                                   @P Q R S T U V W X
                                   @Y Z... 1 2 3 4 5 6
                                   @7 8 9 0  BS END CR
@
@
@                TEST SIX-TESTS TYPEWRITER WRITE
@                          @OPERATION AND CF
@
CNSL6    CW%CCR¤,TYPW4-3.0,4,CNSL6&1.  @CHAINS TWO WORDS        101431.00 40 000102.02 D5    101324.00
         CW%CR¤,TYPW4&2,1,0        @WORDS ARE-CHAINING          101434.02 00 000020.00 00    101325.00
                                   @TEST S,ON FAILURE-FAIL
@
         CW%CCR¤,TYPW4-3.,4,CNSL6&3.  @CHAINS THREE WORDS       101431.00 40 000102.02 D7    101326.00
         CW%CCR¤,TYPW4&2.,1,CNSL6&4.  @WORDS ARE-CHAINING       101436.00 40 000022.02 D8    101327.00
         CW%CR¤,TYPW4&4.,1,0       @TEST SUCCESS...ON           101440.00 00 000020.00 00    101330.00
@                                  @FAILURE-FAIL
@
@                TEST SEVEN-TESTS TYPWRITER WRITE
@                          @OPERATION MF AND CF
@
CNSL7    CW%CD¤,TYPW5-3.,9,0       @WRITE THREE WORDS           101441.00 20 000220.00 00    101331.00
@                                  @WITH END CODE
@                                  @BETWEEN WORDS
@                                  @WORDS ARE-MLTPLE
@                                  @TEST SUCCESSFUL
@                                  @ON FAILURE-FAIL
@
         CW%CDSC¤,TYPW6-3.,4,CNSL7&2.  @WRITE TWO WORDS ON TYPEWRITER   101452.00 60 000102.02 DB    101332.00
         CW%CR¤,TYPW6&1.,4,0       @THE END CODE AND COUNT ZERK 101456.00 00 000100.00 00    101333.00
                                   @OCCUR SIMULTANEOUSLY
@
@
@                TEST EIGHT-TESTS TYPEWRITER
@                          @READ OPERATIO.I
@
@        THE FOLLOWING CWS READ 40 CHARACTERS TYPED IN
@
CNSL8    CW%CR¤,TYPR1,8,0                                       101465.00 00 000200.00 00    101334.00
@
@        THE FOLLOWING CWS READ 40 CHARACTERS TYPED IN---
@        CHAINS AND READS 32 MORE..
@
         CW%CCR¤,TYPR2,8,$&1.                                   101475.00 40 000202.02 DE    101335.00
         CW%CR¤,TYPR3,4,0                                       101505.00 00 000100.00 00    101336.00
@
@        USE THE SAME CONTROL WORDS AND WRITE
@        OUT DATA FOR CHECKING.
```

```
THE FOLLOWING CWS TEST MF AND CF
WHEN IN MF MODE AND AN END CODE IS
ENTERED FROM THE CONSOLE TYPEWRITER THE
NEXT 3 WORDS WILL BE READ FROM CNSL SWITCHES.

FOR ONE TEST-COUNT CHARACTERS AND
HAVE THE END CODE AND COUNT ZERO OCCUR
SIMULTANEOUSLY.....

        CW%CD¤,TYPR4,8,0            @READ IN MF MODE                101511.00 20 000200.00 00      101337.00
        CW%CD¤,TYPR5,25,0           @READ IN MF MODE                101521.00 20 000620.00 00      101340.00
        CW%CDSC¤,TYPR7,10,&-2.      @MF AND CF SIM-TYPE 8 CHAR      101556.00 60 000257.77 FE      101341.00 C

        CW%CDSC¤,TYPR8,20,CNSL8&8.0 @MORE MF AND CF CW              101570.00 60 000502.02 E4      101342.00
        CW%CCR¤,TYPR9,20,CNSL8&9.0                                  101614.00 40 000502.02 E5      101343.00
        CW%CR¤,TYPR10,20,0                                          101640.00 00 000500.00 00      101344.00


            TEST NINE -TESTS READ OPERATION
                            @WITH SF,MF,AND CF.

        @THE FOLLOWING CWS ARE FOR READING
        @WITH MF, SF, AND CF.

        EXECUTE THE FOLLOWING CW TO TEST CF AND SF.

CNSL9   CW%SCCR¤,TYPR11,5,CNSL9&1.0  @SF AND CF TEST, SKIP 5        101664.00 50 000122.02 E6      101345.00

        CW%CR¤,TYPR12,3,0            @TYPE 3 WORDS                  101667.00 00 000060.00 00      101346.00

        CW TO PRINT OUT DATA ON CONSOLE.

        CW%CR¤,TYPR12-3,,6,0                                        101664.00 00 000140.00 00      101347.00
        CW%CR¤,TYPR11,5,0            @CW FOR TEST SF AND CF         101664.00 00 000120.00 00      101350.00


        EXECUTE THE FOLLOWING CW TO TEST CF, SF, AND MF.

        CW%SCDSC¤,TYPR13,4,&1.       @SF CF, AND MF TEST            101672.00 70 000102.02 EA      101351.00
        CW%CD¤,TYPR14,5,0            @DISREGARDS END CODES          101676.00 20 000120.00 00      101352.00

        CW TO PRINT OUT DATA ON CONSOLE.

        CW%CD¤,TYPR13,4,0            @CW FOR TEST SF,CF, AND MF     101672.00 20 000100.00 00      101353.00
        CW%CD¤,TYPR14-3,,6,0                                        101673.00 20 000140.00 00      101354.00
```

```
              @
              DR%BU,64,8□,1                                         1.00              101355.00
WORD1   %8□DD%BU,8,8□,000,001,002,003,004,005,006,007  @BYTE NUMBER WD        000    101356.00
                                                                              001    101356.10
                                                                              002    101356.20
                                                                              003    101356.30
                                                                              004    101356.40
                                                                              005    101356.50
                                                                              006    101356.60
                                                                              007    101356.70
        %8□DD%BU,8,8□,377,377,377,377,377,377,377,377  @ALL ONES WORD         377    101357.00
                                                                              377    101357.10
                                                                              377    101357.20
                                                                              377    101357.30
                                                                              377    101357.40
                                                                              377    101357.50
                                                                              377    101357.60
                                                                              377    101357.70
        DD%BU,64,8□,0                                  @ALL ZEROS WORD  00000000000000000000000  101360.00
        %8□DD%BU,8,8□,377,000,377,000,377,000,377,000  @BYTE PATTERN          377    101361.00
                                                                              000    101361.10
                                                                              377    101361.20
                                                                              000    101361.30
                                                                              377    101361.40
                                                                              000    101361.50
                                                                              377    101361.60
                                                                              000    101361.70
        %8□DD%BU,8,8□,210,210,210,210,210,210,210,210  @ALL EIGHTS            210    101362.00
                                                                              210    101362.10
                                                                              210    101362.20
                                                                              210    101362.30
                                                                              210    101362.40
                                                                              210    101362.50
                                                                              210    101362.60
                                                                              210    101362.70
        %8□DD%BU,8,8□,167,167,167,167,167,167,167,167  @ALL SEVENS            167    101363.00
                                                                              167    101363.10
                                                                              167    101363.20
                                                                              167    101363.30
                                                                              167    101363.40
                                                                              167    101363.50
                                                                              167    101363.60
                                                                              167    101363.70
              @
WORD2   DR%BU,64,8□,6                                   @READ OPERATION    6.00        101364.00
WORD3   DR%BU,64,8□,3                                   @DATA RESERVATIO   3.00        101372.00
WORD4   DR%BU,64,8□,3                                                      3.00        101375.00
TYPW0   DR%BU,64,8□,3                           @RESERVES LOCATIONS FOR    3.00        101400.00
                                                @FIRST THREE WORDS IN
                                                @A TYPEWRITER OPERATION
TYPW1   %16□DD%BU,8,8□,FD,53,5D,4B,00,53,51,53  @CR,TYP TEST                 375    101403.00
                                                                              123    101403.10
                                                                              135    101403.20
                                                                              113    101403.30
                                                                              000    101403.40
                                                                              123    101403.50
                                                                              121    101403.60
                                                                              123    101403.70
        %16□DD%BU,8,8□,37,2D,3D,43,35,33,00,00  @FAILED                       067    101404.00
                                                                              055    101404.10
                                                                              075    101404.20
                                                                              103    101404.30
```

Source	Value	Address
	085	101404.40
	063	101404.50
	000	101404.60
	000	101404.70
`DR%BU,64,8□,3          @DATA RESERVATION          3.00`		101405.00
`TYPW2  %16□DD%BU,8,8□,FD,35,47,33,00,31,49,33  @END COD`	375	101410.00
	065	101410.10
	107	101410.20
	063	101410.30
	000	101410.40
	061	101410.50
	111	101410.60
	063	101410.70
`%16□DD%BU,8,8□,35,00,53,35,51,53,00,FF  @F TEST, END`	065	101411.00
	000	101411.10
	123	101411.20
	065	101411.30
	121	101411.40
	123	101411.50
	000	101411.60
	376	101411.70
`%16□DD%BU,8,8□,37,2D,3D,43,35,33,00,00  @FAILED`	067	101412.00
	055	101412.10
	075	101412.20
	103	101412.30
	065	101412.40
	063	101412.50
	000	101412.60
	000	101412.70
`DR%BU,64,8□,3          @DATA RESERVATION          3.00`		101413.00
`TYPW3  %16□DD%BU,8,8□,FD,2D,00,2F,00,31,00,33  @CR, A B C D`	375	101416.00
	055	101416.10
	000	101416.20
	057	101416.30
	000	101416.40
	061	101416.50
	000	101416.60
	063	101416.70
`%16□DD%BU,8,8□,00,35,00,37,00,39,00,3B      @E F G H`	000	101417.00
	065	101417.10
	000	101417.20
	067	101417.30
	000	101417.40
	071	101417.50
	000	101417.60
	073	101417.70
`%16□DD%BU,8,8□,00,3D,00,3F,00,41,00,43      @I J K L`	000	101420.00
	075	101420.10
	000	101420.20
	077	101420.30
	000	101420.40
	101	101420.50
	000	101420.60
	103	101420.70
`%16□DD%BU,8,8□,00,45,00,47,00,49,00,4B      @M N O P`	000	101421.00
	105	101421.10
	000	101421.20
	107	101421.30
	000	101421.40
	111	101421.50
	000	101421.60
	113	101421.70
`%16□DD%BU,8,8□,00,4D,00,4F,00,51,00,53      @Q R S T`	000	101422.00
	115	101422.10
	000	101422.20

```
                                                                              117  101422.30
                                                                              000  101422.40
                                                                              121  101422.50
                                                                              000  101422.60
                                                                              123  101422.70
        %16┐DD%BU,8,8┐,00,55,00,57,00,59,00,5B        @U V W X                000  101423.00
                                                                              125  101423.10
                                                                              000  101423.20
                                                                              127  101423.30
                                                                              000  101423.40
                                                                              131  101423.50
                                                                              000  101423.60
                                                                              133  101423.70
        %16┐DD%BU,8,8┐,00,5D,00,5F,74,74,74,00        @Y Z...                 000  101424.00
                                                                              135  101424.10
                                                                              000  101424.20
                                                                              137  101424.30
                                                                              164  101424.40
                                                                              164  101424.50
                                                                              164  101424.60
                                                                              000  101424.70
        %16┐DD%BU,8,8┐,00,62,00,64,00,66,00,68        @1 2 3 4                000  101425.00
                                                                              142  101425.10
                                                                              000  101425.20
                                                                              144  101425.30
                                                                              000  101425.40
                                                                              146  101425.50
                                                                              000  101425.60
        %16┐DD%BU,8,8┐,00,6A,00,6C,00,6E,00,70        @5 6 7 8                150  101425.70
                                                                              000  101426.00
                                                                              152  101426.10
                                                                              000  101426.20
                                                                              154  101426.30
                                                                              000  101426.40
                                                                              156  101426.50
                                                                              000  101426.60
        %16┐DD%BU,8,8┐,00,72,00,60,00,00,FC,FD        @9 0  BS, CR            160  101426.70
                                                                              000  101427.00
                                                                              162  101427.10
                                                                              000  101427.20
                                                                              140  101427.30
                                                                              000  101427.40
                                                                              000  101427.50
                                                                              374  101427.60
                                                                              375  101427.70
        %16┐DD%BU,8,8┐,35,47,33,FD,00,00,00,00   @END,CR                      065  101430.00
                                                                              107  101430.10
                                                                              063  101430.20
                                                                              375  101430.30
                                                                              000  101430.40
                                                                              000  101430.50
                                                                              000  101430.60
        DR%BU,64,8┐,3              @DATA RESERVATION            3.00          000  101430.70
                                                                                   101431.00
TYPW4   %16┐DD%BU,8,8┐,FD,31,3B,2D,3D,47,3D,47   @CHAININ                     375  101434.00
                                                                              061  101434.10
                                                                              073  101434.20
                                                                              055  101434.30
                                                                              075  101434.40
                                                                              107  101434.50
                                                                              075  101434.60
                                                                              107  101434.70
        %16┐DD%BU,8,8┐,37,2D,3D,43,35,33,00,00   @FAIL                        067  101435.00
                                                                              055  101435.10
                                                                              075  101435.20
                                                                              103  101435.30
```

		065	101435.40
		063	101435.50
		000	101435.60
		000	101435.70
%16¤DD%BU,8,8¤,39,00,53,35,51,53,00,51	@G TEST S	071	101436.00
		000	101436.10
		123	101436.20
		065	101436.30
		121	101436.40
		123	101436.50
		000	101436.60
		121	101436.70
%16¤DD%BU,8,8¤,37,2D,3D,43,35,33,00,00	@FAIL	067	101437.00
		055	101437.10
		075	101437.20
		103	101437.30
		065	101437.40
		063	101437.50
		000	101437.60
		000	101437.70
%16¤DD%BU,8,8¤,55,31,31,35,51,51,74,74	@UCCESS..	125	101440.00
		061	101440.10
		061	101440.20
		065	101440.30
		121	101440.40
		121	101440.50
		164	101440.60
		164	101440.70
@			
DR%BU,64,8¤,3 @DATA RESERVATION	3.00		101441.00
TYPW5 %16¤DD%BU,8,8¤,FD,45,43,53,48,43,35,FE	@CR, MLTPLE, END	375	101444.00
		105	101444.10
		103	101444.20
		123	101444.30
		110	101444.40
		103	101444.50
		065	101444.60
		376	101444.70
@			
DR%BU,64,8¤,3 @DATA RESERVATION	3.00		101445.00
%16¤DD%BU,8,8¤,53,35,51,53,00,51,55,31	@TEST SUC	123	101450.00
		065	101450.10
		121	101450.20
		123	101450.30
		000	101450.40
		121	101450.50
		125	101450.60
		061	101450.70
%16¤DD%BU,8,8¤,31,35,51,51,37,55,43,74	@CESSFUL.	061	101451.00
		065	101451.10
		121	101451.20
		121	101451.30
		067	101451.40
		125	101451.50
		103	101451.60
		164	101451.70
@			
DR%BU,64,8¤,3 @DATA RESERVATION	3.00		101452.00
TYPW6 %16¤DD%BU,8,8¤,FD,45,31,00,53,51,53,FE	@CR, MC IST, END	375	101455.00
		105	101455.10
		061	101455.20
		000	101455.30
		123	101455.40
		121	101455.50
		123	101455.60
		376	101455.70

	DR%BU,64,8u,3		3.00		101456.00
	%16uDD%BU,8,8u,51,55,31,31,35,51,FE,5F	@SUCCESS,END,Z		121	101461.00
				125	101461.10
				061	101461.20
				061	101461.30
				065	101461.40
				121	101461.50
				376	101461.60
				137	101461.70
	DR%BU,64,8u,2		2.00		101462.00
	%16uDD%BU,8,8u,37,2D,3D,43,35,33,00,00	@FAILEED		067	101464.00
				055	101464.10
				075	101464.20
				103	101464.30
				065	101464.40
				063	101464.50
				000	101464.60
				000	101464.70
TYPR1	DR%BU,64,8u,8	@RESERVED FOR	10.00		101465.00
TYPR2	DR%BU,64,8u,8	@TYPEWRITER	10.00		101475.00
TYPR3	DR%BU,64,8u,4	@READ TESTS	4.00		101505.00
TYPR4	DR%BU,64,8u,8		10.00		101511.00
TYPR5	DR%BU,64,8u,25		31.00		101521.00
TYPR6	DR%BU,64,8u,4		4.00		101552.00
TYPR7	DR%BU,64,8u,10		12.00		101556.00
TYPR8	DR%BU,64,8u,20		24.00		101570.00
TYPR9	DR%BU,64,8u,20		24.00		101614.00
TYPR10	DR%BU,64,8u,20		24.00		101640.00
TYPR11	DR%BU,64,8u,3		3.00		101664.00
TYPR12	DR%BU,64,8u,3		3.00		101667.00
TYPR13	DR%BU,64,8u,4		4.00		101672.00
TYPR14	DR%BU,64,8u,5		5.00		101676.00
	@				

```
@
@       TYPEWRITER TESTS
@           TEST ONE-BACKSPACE TEST
@           TEST TWO-RIPPLE TEST
@           TEST THREE-BALL MOVEMENT TEST
@       TEST FOUR - ALL CHARACTER PRINT
@
@
@       BACKSPACE TEST LOOP
@
TWT1    CW%CCR¤,BST1,11,TWT1&1.        @BACKSPACE TEST      102041.00 40 000262.03 C4    101703.00
        CW%CCR¤,BST1&3.,8,TWT1&2.      @TYPES 3 LINES       102044.00 40 000202.03 C5    101704.00
        CW%CDSC¤,BST1&3,,8,TWT1        @LOOP                102044.00 60 000202.03 C3    101705.00
@
@
@       RIPPLE TEST
@
@                                      @RIPPLE 26 LINES
TWT2    CW%CCR¤,RIPL,14,TWT2&1.        @AB...               102054.00 40 000342.03 C7    101706.00
        CW%CCR¤,RIPL0,1,TWT2&2.                             102057.00 40 000022.03 C8    101707.00
        CW%CCR¤,RIPL3,10,TWT2&3.       @BC...               102075.00 40 000242.03 C9    101710.00
        CW%CCR¤,RIPL0,1,TWT2&4.                             102057.00 40 000022.03 CA    101711.00
        CW%CCR¤,RIPL2&2.,,3,TWT2&5.    @CD...               102072.00 40 000062.03 CB    101712.00
        CW%CCR¤,RIPL1,7,TWT2&6.                             102060.00 40 000162.03 CC    101713.00
        CW%CCR¤,RIPL0,1,TWT2&7.                             102057.00 40 000022.03 CD    101714.00
        CW%CCR¤,RIPL4&2.,,3,TWT2&8.    @DE...               102107.00 40 000062.03 CE    101715.00
        CW%CCR¤,RIPL3,7,TWT2&9.                             102075.00 40 000162.03 CF    101716.00
        CW%CCR¤,RIPL0,1,TWT2A                               102057.00 40 000022.03 D0    101717.00
TWT2A   CW%CCR¤,RIPL1&7.,,6,TWT2A&1.   @EF...               102067.00 40 000142.03 D1    101720.00
        CW%CCR¤,RIPL1,4,TWT2A&2.                            102060.00 40 000102.03 D2    101721.00
        CW%CCR¤,RIPL0,1,TWT2A&3.                            102057.00 40 000022.03 D3    101722.00
        CW%CCR¤,RIPL3&7.,,6,TWT2A&4.   @FG...               102104.00 40 000142.03 D4    101723.00
        CW%CCR¤,RIPL3,4,TWT2A&5.                            102075.00 40 000102.03 D5    101724.00
        CW%CCR¤,RIPL0,1,TWT2A&6.                            102057.00 40 000022.03 D6    101725.00
        CW%CCR¤,RIPL1&4.,,9,TWT2A&7.   @GH...               102064.00 40 000222.03 D7    101726.00
        CW%CCR¤,RIPL1,1,TWT2A&8.                            102060.00 40 000022.03 D8    101727.00
        CW%CCR¤,RIPL0,1,TWT2A&9.                            102057.00 40 000022.03 D9    101730.00
        CW%CCR¤,RIPL3&4.,,9,TWT2B      @HI...               102101.00 40 000222.03 DA    101731.00
TWT2B   CW%CCR¤,RIPL3,1,TWT2B&1.                            102075.00 40 000022.03 DB    101732.00
        CW%CCR¤,RIPL0,1,TWT2B&2.                            102057.00 40 000022.03 DC    101733.00
        CW%CCR¤,RIPL1&1.,,10,TWT2B&3.  @IJ...               102061.00 40 000242.03 DD    101734.00
        CW%CCR¤,RIPL0,1,TWT2B&4.                            102057.00 40 000022.03 DE    101735.00
        CW%CCR¤,RIPL3&1.,,10,TWT2B&5.  @JK...               102076.00 40 000242.03 DF    101736.00
        CW%CCR¤,RIPL0,1,TWT2B&6.                            102057.00 40 000022.03 E0    101737.00
        CW%CCR¤,RIPL2&3.,,2,TWT2B&7.   @KL...               102073.00 40 000042.03 E1    101740.00
        CW%CCR¤,RIPL1,8,TWT2B&8.                            102060.00 40 000202.03 E2    101741.00
        CW%CCR¤,RIPL0,1,TWT2B&9.                            102057.00 40 000022.03 E3    101742.00
        CW%CCR¤,RIPL4&3.,,2,TWT2C      @LM...               102110.00 40 000042.03 E4    101743.00
TWT2C   CW%CCR¤,RIPL3,8,TWT2C&1.                            102075.00 40 000202.03 E5    101744.00
        CW%CCR¤,RIPL0,1,TWT2C&2.                            102057.00 40 000022.03 E6    101745.00
        CW%CCR¤,RIPL2,5,TWT2C&3.       @MN...               102070.00 40 000122.03 E7    101746.00
        CW%CCR¤,RIPL1,5,TWT2C&4.                            102060.00 40 000122.03 E8    101747.00
        CW%CCR¤,RIPL0,1,TWT2C&5.                            102057.00 40 000022.03 E9    101750.00
        CW%CCR¤,RIPL4,5,TWT2C&6.       @NO...               102105.00 40 000122.03 EA    101751.00
        CW%CCR¤,RIPL3,5,TWT2C&7.                            102075.00 40 000122.03 EB    101752.00
        CW%CCR¤,RIPL0,1,TWT2C&8.                            102057.00 40 000022.03 EC    101753.00
        CW%CCR¤,RIPL1&5.,,8,TWT2C&9.   @OP...               102065.00 40 000202.03 ED    101754.00
        CW%CCR¤,RIPL1,2,TWT2D                               102060.00 40 000042.03 EE    101755.00
TWT2D   CW%CCR¤,RIPL0,1,TWT2D&1.                            102057.00 40 000022.03 EF    101756.00
        CW%CCR¤,RIPL3&5.,,8,TWT2D&2.   @PQ...               102102.00 40 000202.03 F0    101757.00
        CW%CCR¤,RIPL3,2,TWT2D&3.                            102075.00 40 000042.03 F1    101760.00
        CW%CCR¤,RIPL0,1,TWT2D&4.                            102057.00 40 000022.03 F2    101761.00
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                CW%CCR¤,RIPL1&2,,10,TWT2D&5.    @GR...              102082.00 40 000242.03 F3    101762.00
                CW%CCR¤,RIPL0,1,TWT2D&6.                            102057.00 40 000022.03 F4    101763.00
                CW%CCR¤,RIPL3&2,,10,TWT2D&7.    @RS...              102077.00 40 000242.03 F5    101764.00
                CW%CCR¤,RIPL0,1,TWT2D&8.                            102057.00 40 000022.03 F6    101765.00
                CW%CCR¤,RIPL2&4,,1,TWT2D&9.     @ST...              102074.00 40 000022.03 F7    101766.00
                CW%CCR¤,RIPL1,9,TWT2E                               102060.00 40 000222.03 F8    101767.00
TWT2E           CW%CCR¤,RIPL0,1,TWT2E&1.                            102057.00 40 000022.03 F9    101770.00
                CW%CCR¤,RIPL4&4,,1,TWT2E&2.     @TU...              102111.00 40 000022.03 FA    101771.00
                CW%CCR¤,RIPL3,9,TWT2E&3.                            102075.00 40 000222.03 FB    101772.00
                CW%CCR¤,RIPL0,1,TWT2E&4.                            102057.00 40 000022.03 FC    101773.00
                CW%CCR¤,RIPL2&1,,4,TWT2E&5.     @UV...              102071.00 40 000102.03 FD    101774.00
                CW%CCR¤,RIPL1,6,TWT2E&6.                            102060.00 40 000142.03 FE    101775.00
                CW%CCR¤,RIPL0,1,TWT2E&7.                            102057.00 40 000022.03 FF    101776.00
                CW%CCR¤,RIPL4&1,,4,TWT2E&8.     @VW...              102106.00 40 000102.04 00    101777.00
                CW%CCR¤,RIPL3,6,TWT2E&9.                            102075.00 40 000142.04 01    102000.00
                CW%CCR¤,RIPL0,1,TWT2F                               102057.00 40 000022.04 02    102001.00
TWT2F           CW%CCR¤,RIPL1&6,,7,TWT2F&1.     @WX...              102066.00 40 000162.04 03    102002.00
                CW%CCR¤,RIPL1,3,TWT2F&2.                            102060.00 40 000062.04 04    102003.00
                CW%CCR¤,RIPL0,1,TWT2F&3                             102057.00 40 000022.04 05    102004.00
                CW%CCR¤,RIPL3&6,,7,TWT2F&4.     @XY...              102103.00 40 000162.04 06    102005.00
                CW%CCR¤,RIPL3,3,TWT2F&5.                            102075.00 40 000062.04 07    102006.00
                CW%CCR¤,RIPL0,1,TWT2F&6.                            102057.00 40 000022.04 08    102007.00
                CW%CCR¤,RIPL1&3,,10,TWT2F&7.    @YZ..               102063.00 40 000242.04 09    102010.00
                CW%CCR¤,RIPL0,1,TWT2F&8.                            102057.00 40 000022.04 0A    102011.00
                CW%CCR¤,RIPL3&3,,10,TWT2F&9.    @ZA..               102100.00 40 000242.04 0B    102012.00
                CW%CR¤,RIPL5,4,0                                    102112.00 00 000100.00 00    102013.00
        @
        @
        @       BALL MOVEMENT TEST LOOP
        @
TWT3            CW%CCR¤,BMT0,15,TWT3&1.         @BALL MOVEMENT TEST  102022.00 40 000362.04 0D    102014.00
                CW%CCR¤,BMT1,12,TWT3&2.         @PRINTS 10-44 CHAR-  102025.00 40 000302.04 0E    102015.00
                CW%CCR¤,BMT1,12,TWT3&3.         @ACTER LINES AND     102025.00 40 000302.04 0F    102016.00
                CW%CCR¤,BMT1,12,TWT3&4.         @ALL CHARACTERS      102025.00 40 000302.04 10    102017.00
                CW%CDSC¤,BMT1,12,TWT3           @LOOP                102025.00 60 000302.04 0C    102020.00
        @
        @
        @       TEST FOUR
        @
        @       EXECUTE THIS CONTROL WORD FOR AN ALL
        @       CHARACTER PRINT
        @
        @
                CW%CR¤,ALLC,27,0                                    102116.00 00 000660.00 00    102021.00
        @
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                    TYPEWRITER TEST DATA


BMT0      DR%BU,64,8¤,3                       @RESERVE 3 LOC.        3.00                      102022.00
BMT1      %16¤DD%BU,8,8¤,FD,70,2F,60,3F,50,4F,40    @CR,8BOJSRK                    375         102025.00
                                                                                  160         102025.10
                                                                                  057         102025.20
                                                                                  140         102025.30
                                                                                  077         102025.40
                                                                                  120         102025.50
                                                                                  117         102025.60
                                                                                  100         102025.70
          %16¤DD%BU,8,8¤,5F,30,6F,20,27,68,37,58    @ZC7  4FW                     137         102026.00
                                                                                  060         102026.10
                                                                                  157         102026.20
                                                                                  040         102026.30
                                                                                  047         102026.40
                                                                                  150         102026.50
                                                                                  067         102026.60
                                                                                  130         102026.70
          %16¤DD%BU,8,8¤,47,48,57,38,67,28,77,71    @NOVG3, 8                     107         102027.00
                                                                                  110         102027.10
                                                                                  127         102027.20
                                                                                  070         102027.30
                                                                                  147         102027.40
                                                                                  050         102027.50
                                                                                  167         102027.60
                                                                                  161         102027.70
          %16¤DD%BU,8,8¤,76,61,66,51,56,41,46,31    @-03SVKNC                     166         102030.00
                                                                                  141         102030.10
                                                                                  146         102030.20
                                                                                  121         102030.30
                                                                                  126         102030.40
                                                                                  101         102030.50
                                                                                  106         102030.60
                                                                                  061         102030.70
          %16¤DD%BU,8,8¤,36,21,26,69,6E,59,5E,49    @F6/47WZO                     066         102031.00
                                                                                  041         102031.10
                                                                                  046         102031.20
                                                                                  151         102031.30
                                                                                  156         102031.40
                                                                                  131         102031.50
                                                                                  136         102031.60
                                                                                  111         102031.70
          %16¤DD%BU,8,8¤,4E,39,3E,29,2E,00,00,FD    @RGJ B  ,CR                   116         102032.00
                                                                                  071         102032.10
                                                                                  076         102032.20
                                                                                  051         102032.30
                                                                                  056         102032.40
                                                                                  000         102032.50
                                                                                  000         102032.60
                                                                                  375         102032.70
          %16¤DD%BU,8,8¤,74,2B,64,3B,54,4B,44,5B    @. 2HUPMX                     164         102033.00
                                                                                  053         102033.10
                                                                                  144         102033.20
                                                                                  073         102033.30
                                                                                  124         102033.40
                                                                                  113         102033.50
                                                                                  104         102033.60
                                                                                  133         102033.70
          %16¤DD%BU,8,8¤,34,6B,24,23,6C,33,5C,43    @E5  6DYL                     064         102034.00
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                                                                                          153    102034.10
                                                                                          044    102034.20
                                                                                          043    102034.30
                                                                                          154    102034.40
                                                                                          063    102034.50
                                                                                          134    102034.60
                                                                                          103    102034.70
          %16¤DD%BU,8,8¤,4C,53,3C,63,2C,73,72,2D        @QTI1A99A                          114    102035.00
                                                                                          123    102035.10
                                                                                          074    102035.20
                                                                                          143    102035.30
                                                                                          054    102035.40
                                                                                          163    102035.50
                                                                                          162    102035.60
                                                                                          055    102035.70
          %16¤DD%BU,8,8¤,62,3D,52,4D,42,5D,32,6D        @1ITQLYD6                          142    102036.00
                                                                                          075    102036.10
                                                                                          122    102036.20
                                                                                          115    102036.30
                                                                                          102    102036.40
                                                                                          135    102036.50
                                                                                          062    102036.60
                                                                                          155    102036.70
          %16¤DD%BU,8,8¤,22,25,6A,35,5A,45,4A,55         @   5FXMPU                        042    102037.00
                                                                                          045    102037.10
                                                                                          152    102037.20
                                                                                          065    102037.30
                                                                                          132    102037.40
                                                                                          105    102037.50
                                                                                          112    102037.60
                                                                                          125    102037.70
          %16¤DD%BU,8,8¤,3A,65,2A,75,00,00,FC,FC        @H2      BS,BS                     072    102040.00
                                                                                          145    102040.10
                                                                                          052    102040.20
                                                                                          165    102040.30
                                                                                          000    102040.40
                                                                                          000    102040.50
                                                                                          374    102040.60
                                                                                          374    102040.70
          @
          BST1      DR%BU,64,8¤,3                                           3.00                  102041.00
                    %16¤DD%BU,8,8¤,FD,53,00,00,50,00,3C,50        @T  S IS                 375    102044.00
                                                                                          123    102044.10
                                                                                          000    102044.20
                                                                                          000    102044.30
                                                                                          120    102044.40
                                                                                          000    102044.50
                                                                                          074    102044.60
                                                                                          120    102044.70
          %16¤DD%BU,8,8¤,FC,FC,FC,FC,FC,FC,3A,3C        @       HI                         374    102045.00
                                                                                          374    102045.10
                                                                                          374    102045.20
                                                                                          374    102045.30
                                                                                          374    102045.40
                                                                                          374    102045.50
                                                                                          072    102045.60
                                                                                          074    102045.70
          %16¤DD%BU,8,8¤,00,00,00,00,00,2C,00,00        @    A                             000    102046.00
                                                                                          000    102046.10
                                                                                          000    102046.20
                                                                                          000    102046.30
                                                                                          000    102046.40
                                                                                          054    102046.50
                                                                                          000    102046.60
                                                                                          000    102046.70
          %16¤DD%BU,8,8¤,00,00,00,00,00,00,00,00                                          000    102047.00
```

			000	102047.10
			000	102047.20
			000	102047.30
			000	102047.40
			000	102047.50
			000	102047.60
			000	102047.70
	%16¤DD%BU,8,8¤,00,52,34,50,52,74,FC,FC	@TEST	000	102050.00
			122	102050.10
			064	102050.20
			120	102050.30
			122	102050.40
			164	102050.50
			374	102050.60
			374	102050.70
	%16¤DD%BU,8,8¤,FC,FC,FC,FC,FC,FC,FC,FC		374	102051.00
			374	102051.10
			374	102051.20
			374	102051.30
			374	102051.40
			374	102051.50
			374	102051.60
			374	102051.70
	%16¤DD%BU,8,8¤,FC,FC,FC,FC,FC,0F,0D,11	@ BAC	374	102052.00
			374	102052.10
			374	102052.20
			374	102052.30
			374	102052.40
			017	102052.50
			015	102052.60
			021	102052.70
	%16¤DD%BU,8,8¤,81,91,8B,0D,11,15,00,00	@KSPACE	201	102053.00
			221	102053.10
			213	102053.20
			015	102053.30
			021	102053.40
			025	102053.50
			000	102053.60
			000	102053.70
RIPL	DR%BU,64,8¤,3	3.00		102054.00
RIPL0	%16¤DD%BU,8,8¤,FC,00,00,FC,FC,00,00,FD	@CARR-RET	374	102057.00
			000	102057.10
			000	102057.20
			374	102057.30
			374	102057.40
			000	102057.50
			000	102057.60
			375	102057.70
RIPL1	%16¤DD%BU,8,8¤,2D,2F,31,33,35,37,39,3B	@ABCDEFGH	055	102060.00
			057	102060.10
			061	102060.20
			063	102060.30
			065	102060.40
			067	102060.50
			071	102060.60
			073	102060.70
	%16¤DD%BU,8,8¤,3D,3F,41,43,45,47,49,4B	@IJKLMNOP	075	102061.00
			077	102061.10
			101	102061.20
			103	102061.30
			105	102061.40
			107	102061.50
			111	102061.60
			113	102061.70
	%16¤DD%BU,8,8¤,4D,4F,51,53,55,57,59,5B	@QRSTUVWX	115	102062.00
			117	102062.10

```
                    %16¤DD%BU,8,8¤,5D,5F,2D,2F,31,33,35,37    @YZABCDEF

                    %16¤DD%BU,8,8¤,39,3B,3D,3F,41,43,45,47    @GHIJKLMN

                    %16¤DD%BU,8,8¤,49,4B,4D,4F,51,53,55,57    @OPQRSTUV

                    %16¤DD%BU,8,8¤,59,5B,5D,5F,2D,2F,31,33    @WXYZABCD

                    %16¤DD%BU,8,8¤,35,37,39,3B,3D,3F,41,43    @EFGHIJKL

        RIPL2       %16¤DD%BU,8,8¤,45,47,49,4B,4D,4F,51,53    @MNOPQRST

                    %16¤DD%BU,8,8¤,55,57,59,5B,5D,5F,2D,2F    @UVWXYZAB

                    %16¤DD%BU,8,8¤,31,33,35,37,39,3B,3D,3F    @CDEFGHIJ
```

121	102062.20
123	102062.30
125	102062.40
127	102062.50
131	102062.60
133	102062.70
135	102063.00
137	102063.10
055	102063.20
057	102063.30
061	102063.40
063	102063.50
065	102063.60
067	102063.70
071	102064.00
073	102064.10
075	102064.20
077	102064.30
101	102064.40
103	102064.50
105	102064.60
107	102064.70
111	102065.00
113	102065.10
115	102065.20
117	102065.30
121	102065.40
123	102065.50
125	102065.60
127	102065.70
131	102066.00
133	102066.10
135	102066.20
137	102066.30
055	102066.40
057	102066.50
061	102066.60
063	102066.70
065	102067.00
067	102067.10
071	102067.20
073	102067.30
075	102067.40
077	102067.50
101	102067.60
103	102067.70
105	102070.00
107	102070.10
111	102070.20
113	102070.30
115	102070.40
117	102070.50
121	102070.60
123	102070.70
125	102071.00
127	102071.10
131	102071.20
133	102071.30
135	102071.40
137	102071.50
055	102071.60
057	102071.70
061	102072.00
063	102072.10
065	102072.20
067	102072.30

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                                                                              071    102072.40
                                                                              073    102072.50
                                                                              075    102072.60
                                                                              077    102072.70
            %16¤DD%BU,8,8¤,41,43,45,47,49,4B,4D,4F        @KLMNOPQR            101    102073.00
                                                                              103    102073.10
                                                                              105    102073.20
                                                                              107    102073.30
                                                                              111    102073.40
                                                                              113    102073.50
                                                                              115    102073.60
                                                                              117    102073.70
            %16¤DD%BU,8,8¤,51,53,55,57,59,5B,5D,5F        @STUVWXYZ           121    102074.00
                                                                              123    102074.10
                                                                              125    102074.20
                                                                              127    102074.30
                                                                              131    102074.40
                                                                              133    102074.50
                                                                              135    102074.60
                                                                              137    102074.70
         @
         RIPL3   %16¤DD%BU,8,8¤,2F,31,33,35,37,39,3B,3D   @BCDEFGHI           057    102075.00
                                                                              061    102075.10
                                                                              063    102075.20
                                                                              065    102075.30
                                                                              067    102075.40
                                                                              071    102075.50
                                                                              073    102075.60
                                                                              075    102075.70
            %16¤DD%BU,8,8¤,3F,41,43,45,47,49,4B,4D        @JKLMNOPQ           077    102076.00
                                                                              101    102076.10
                                                                              103    102076.20
                                                                              105    102076.30
                                                                              107    102076.40
                                                                              111    102076.50
                                                                              113    102076.60
                                                                              115    102076.70
            %16¤DD%BU,8,8¤,4F,51,53,55,57,59,5B,5D        @RSTUVWXY           117    102077.00
                                                                              121    102077.10
                                                                              123    102077.20
                                                                              125    102077.30
                                                                              127    102077.40
                                                                              131    102077.50
                                                                              133    102077.60
                                                                              135    102077.70
            %16¤DD%BU,8,8¤,5F,2D,2F,31,33,35,37,39        @ZABCDEFG           137    102100.00
                                                                              055    102100.10
                                                                              057    102100.20
                                                                              061    102100.30
                                                                              063    102100.40
                                                                              065    102100.50
                                                                              067    102100.60
                                                                              071    102100.70
            %16¤DD%BU,8,8¤,3B,3D,3F,41,43,45,47,49        @HIJKLMNO           073    102101.00
                                                                              075    102101.10
                                                                              077    102101.20
                                                                              101    102101.30
                                                                              103    102101.40
                                                                              105    102101.50
                                                                              107    102101.60
                                                                              111    102101.70
            %16¤DD%BU,8,8¤,4B,4D,4F,51,53,55,57,59        @PQRSTUVW           113    102102.00
                                                                              115    102102.10
                                                                              117    102102.20
                                                                              121    102102.30
                                                                              123    102102.40
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        %16¤DD%BU,8,8¤,5B,5D,5F,2D,2F,31,33,35        @XYZABCDE




%16¤DD%BU,8,8¤,37,39,3B,3D,3F,41,43,45        @FGHIJKLM





RIPL4   %16¤DD%BU,8,8¤,47,49,4B,4D,4F,51,53,55        @NOPQRSTU




        %16¤DD%BU,8,8¤,57,59,5B,5D,5F,2D,2F,31        @VWXYZABC




%16¤DD%BU,8,8¤,33,35,37,39,3B,3D,3F,41        @DEFGHIJK





        %16¤DD%BU,8,8¤,43,45,47,49,4B,4D,4F,51        @LMNOPQRS




        %16¤DD%BU,8,8¤,53,55,57,59,5B,5D,5F,2D        @TUVWXYZA




RIPL5   %16¤DD%BU,8,8¤,FD,53,3B,3D,51,00,3D,51        @CR, THIS IS
```

125	102102.50
127	102102.60
131	102102.70
133	102103.00
135	102103.10
137	102103.20
055	102103.30
057	102103.40
061	102103.50
063	102103.60
065	102103.70
067	102104.00
071	102104.10
073	102104.20
075	102104.30
077	102104.40
101	102104.50
103	102104.60
105	102104.70
107	102105.00
111	102105.10
113	102105.20
115	102105.30
117	102105.40
121	102105.50
123	102105.60
125	102105.70
127	102106.00
131	102106.10
133	102106.20
135	102106.30
137	102106.40
055	102106.50
057	102106.60
061	102106.70
063	102107.00
065	102107.10
067	102107.20
071	102107.30
073	102107.40
075	102107.50
077	102107.60
101	102107.70
103	102110.00
105	102110.10
107	102110.20
111	102110.30
113	102110.40
115	102110.50
117	102110.60
121	102110.70
123	102111.00
125	102111.10
127	102111.20
131	102111.30
133	102111.40
135	102111.50
137	102111.60
055	102111.70
375	102112.00
123	102112.10
073	102112.20
075	102112.30
121	102112.40
000	102112.50
075	102112.60

			121	102112.70
%16□DD%BU,8,8□,53,3B,35,00,35,47,33,00	@THE END		123	102113.00
			073	102113.10
			065	102113.20
			000	102113.30
			065	102113.40
			107	102113.50
			063	102113.60
			000	102113.70
%16□DD%BU,8,8□,49,37,00,4F,3D,4B,4B,43	@OF RIPPL		111	102114.00
			067	102114.10
			000	102114.20
			117	102114.30
			075	102114.40
			113	102114.50
			113	102114.60
			103	102114.70
%16□DD%BU,8,8□,35,00,53,35,51,53,74,74	@E TEST..		065	102115.00
			000	102115.10
			123	102115.20
			065	102115.30
			121	102115.40
			123	102115.50
			164	102115.60
			164	102115.70

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     CNOP
•
•    RED ALPHABET
•
ALLC DR%BU,64,8□,%3□                              3.00            102116.00
     %16□DD%BU,8,8□,FD,0C,0D,0E,0F,10,11,12                375     102121.00
                                                     014     102121.10
                                                     015     102121.20
                                                     016     102121.30
                                                     017     102121.40
                                                     020     102121.50
                                                     021     102121.60
                                                     022     102121.70
     %16□DD%BU,8,8□,13,14,15,16,17,18,19,1A           023     102122.00
                                                     024     102122.10
                                                     025     102122.20
                                                     026     102122.30
                                                     027     102122.40
                                                     030     102122.50
                                                     031     102122.60
                                                     032     102122.70
     %16□DD%BU,8,8□,1B,1C,1D,1E,1F,80,81,82           033     102123.00
                                                     034     102123.10
                                                     035     102123.20
                                                     036     102123.30
                                                     037     102123.40
                                                     200     102123.50
                                                     201     102123.60
                                                     202     102123.70
     %16□DD%BU,8,8□,83,84,85,86,87,88,89,8A           203     102124.00
                                                     204     102124.10
                                                     205     102124.20
                                                     206     102124.30
                                                     207     102124.40
                                                     210     102124.50
                                                     211     102124.60
                                                     212     102124.70
     %16□DD%BU,8,8□,8B,8C,8D,8E,8F,90,91,92           213     102125.00
                                                     214     102125.10
                                                     215     102125.20
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	%16¤DD%BU,8,8¤,93,94,95,96,97,98,99,9A	216	102125.30
		217	102125.40
		220	102125.50
		221	102125.60
		222	102125.70
		223	102126.00
		224	102126.10
		225	102126.20
		226	102126.30
		227	102126.40
		230	102126.50
		231	102126.60
	%16¤DD%BU,8,8¤,9B,9C,9D,9E,9F,00,00,00	232	102126.70
		233	102127.00
		234	102127.10
		235	102127.20
		236	102127.30
		237	102127.40
		000	102127.50
		000	102127.60
		000	102127.70

●
● BLACK ALPHABET
●

	%16¤DD%BU,8,8¤,FD,2C,2D,2E,2F,30,31,32	375	102130.00
		054	102130.10
		055	102130.20
		056	102130.30
		057	102130.40
		060	102130.50
		061	102130.60
	%16¤DD%BU,8,8¤,33,34,35,36,37,38,39,3A	062	102130.70
		063	102131.00
		064	102131.10
		065	102131.20
		066	102131.30
		067	102131.40
		070	102131.50
		071	102131.60
	%16¤DD%BU,8,8¤,3B,3C,3D,3E,3F,40,41,42	072	102131.70
		073	102132.00
		074	102132.10
		075	102132.20
		076	102132.30
		077	102132.40
		100	102132.50
		101	102132.60
	%16¤DD%BU,8,8¤,43,44,45,46,47,48,49,4A	102	102132.70
		103	102133.00
		104	102133.10
		105	102133.20
		106	102133.30
		107	102133.40
		110	102133.50
		111	102133.60
	%16¤DD%BU,8,8¤,4B,4C,4D,4E,4F,50,51,52	112	102133.70
		113	102134.00
		114	102134.10
		115	102134.20
		116	102134.30
		117	102134.40
		120	102134.50
		121	102134.60
	%16¤DD%BU,8,8¤,53,54,55,56,57,58,59,5A	122	102134.70
		123	102135.00
		124	102135.10

			125	102135.28
			126	102135.30
			127	102135.40
			130	102135.50
			131	102135.60
			132	102135.70
%16¤DD%BU,8,8¤,5B,5C,5D,5E,5F,00,00,00			133	102136.00
			134	102136.10
			135	102136.20
			136	102136.30
			137	102136.40
			000	102136.50
			000	102136.60
			000	102136.70

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@
@       RED NUMBERS & SPECIALS
@
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%16¤DD%BU,8,8¤,FD,01,02,03,04,05,06,07			375	102137.00
			001	102137.10
			002	102137.20
			003	102137.30
			004	102137.40
			005	102137.50
			006	102137.60
			007	102137.70
%16¤DD%BU,8,8¤,08,09,0A,0B,A0,A1,A2,A3			010	102140.00
			011	102140.10
			012	102140.20
			013	102140.30
			240	102140.40
			241	102140.50
			242	102140.60
			243	102140.70
%16¤DD%BU,8,8¤,A4,A5,A6,A7,A8,A9,AA,AB			244	102141.00
			245	102141.10
			246	102141.20
			247	102141.30
			250	102141.40
			251	102141.50
			252	102141.60
			253	102141.70
%16¤DD%BU,8,8¤,AC,AD,AE,AF,B0,B1,B2,B3			254	102142.00
			255	102142.10
			256	102142.20
			257	102142.30
			260	102142.40
			261	102142.50
			262	102142.60
			263	102142.70
%16¤DD%BU,8,8¤,B4,B5,B6,B7,00,00,00,00			264	102143.00
			265	102143.10
			266	102143.20
			267	102143.30
			000	102143.40
			000	102143.50
			000	102143.60
			000	102143.70

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@
@       BLACK NUMBERS & SPECIALS
@
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%16¤DD%BU,8,8¤,FD,20,21,22,23,24,25,26			375	102144.00
			040	102144.10
			041	102144.20
			042	102144.30
			043	102144.40
			044	102144.50

	046	102144.70
%16¤DD%BU,8,8¤,27,28,29,2A,2B,60,61,62	047	102145.00
	050	102145.10
	051	102145.20
	052	102145.30
	053	102145.40
	140	102145.50
	141	102145.60
	142	102145.70
%16¤DD%BU,8,8¤,63,64,65,66,67,68,69,6A	143	102146.00
	144	102146.10
	145	102146.20
	146	102146.30
	147	102146.40
	150	102146.50
	151	102146.60
	152	102146.70
%16¤DD%BU,8,8¤,6B,6C,6D,6E,6F,70,71,72	153	102147.00
	154	102147.10
	155	102147.20
	156	102147.30
	157	102147.40
	160	102147.50
	161	102147.60
	162	102147.70
%16¤DD%BU,8,8¤,73,74,75,76,77,00,00,00	163	102150.00
	164	102150.10
	165	102150.20
	166	102150.30
	167	102150.40
	000	102150.50
	000	102150.60
	000	102150.70

CNOP

```
●     CARD PUNCH TEST
●
●          TEST ONE-NON-ECC MODE
●          TEST TWO-ECC MODE
●
●     TEST ONE-NON-ECC MODE-15 WORDS PER CARD
●          TABLE OF STARTING POSITION OF WORDS PUNCHED
●
●          WORD     COLUMN     ROW     WORD     COLUMN     ROW
●           1          1        12      2         6         2
●           3         11         6      4        17        12
●           5         22         2      6        27         6
●           7         33        12      8        38         2
●           9         43         6     10        49        12
●          11         55         2     12        59         6
●          13         65        12     14        70         2
●          15         75         6
●
PCH1      CW%CR¤,PWD1,15,0              @PUNCH ONE CARD          102450.00 00 000360.00 00      102151.00
●
●
●     THE FOLLOWING CWS PUNCH 13 CARDS DIAGONAL PATTERN
●
          CW%CCR¤,PWD1,13,&1.                                    102450.00 40 000322.04 6B      102152.00
          CW%CDSC¤,PWD1,2,&1.           @PATTERN TEST-PUNCH 13 CARDS  102450.00 60 000042.04 6C  102153.00
          CW%CCR¤,PWD1&1,,12,&1.        @TOTAL OF 13 CARDS.      102451.00 40 000302.04 6D      102154.00
          CW%CDSC¤,PWD1,3,&1.                                    102450.00 60 000062.04 6E      102155.00
          CW%CCR¤,PWD1&2,,11,&1.        @CARD 3                  102452.00 40 000262.04 6F      102156.00
          CW%CDSC¤,PWD1,4,&1.                                    102450.00 60 000102.04 70      102157.00
          CW%CCR¤,PWD1&3,,10,&1.        @CARD 4                  102453.00 40 000242.04 71      102160.00
          CW%CDSC¤,PWD1,5,&1.                                    102450.00 60 000122.04 72      102161.00
          CW%CCR¤,PWD1&4,,9,&1.         @CARD 5                  102454.00 40 000222.04 73      102162.00
          CW%CDSC¤,PWD1,6,&1.                                    102450.00 60 000142.04 74      102163.00
          CW%CCR¤,PWD1&5,,8,&1.         @CARD 6                  102455.00 40 000202.04 75      102164.00
          CW%CDSC¤,PWD1,7,&1.                                    102450.00 60 000162.04 76      102165.00
          CW%CCR¤,PWD1&6,,7,&1.         @CARD 7                  102456.00 40 000162.04 77      102166.00
          CW%CDSC¤,PWD1,8,&1.                                    102450.00 60 000202.04 78      102167.00
          CW%CCR¤,PWD1&7,,6,&1.         @CARD 8                  102457.00 40 000142.04 79      102170.00
          CW%CDSC¤,PWD1,9,&1.                                    102450.00 60 000222.04 7A      102171.00
          CW%CCR¤,PWD1&8,,5,&1.         @CARD 9                  102460.00 40 000122.04 7B      102172.00
          CW%CDSC¤,PWD1,10,&1.                                   102450.00 60 000242.04 7C      102173.00
          CW%CCR¤,PWD1&9,,4,&1.         @CARD 10                 102461.00 40 000102.04 7D      102174.00
          CW%CDSC¤,PWD1,11,&1.                                   102450.00 60 000262.04 7E      102175.00
          CW%CCR¤,PWD1&10,,3,&1.        @CARD 11                 102462.00 40 000062.04 7F      102176.00
          CW%CDSC¤,PWD1,12,&1.                                   102450.00 60 000302.04 80      102177.00
          CW%CCR¤,PWD1&11,,2,&1.        @CARD 12                 102463.00 40 000042.04 81      102200.00
          CW%CDSC¤,PWD1,13,&1.                                   102450.00 60 000322.04 82      102201.00
          CW%CCR¤,PWD1&12,,1,&1.                                 102464.00 40 000022.04 83      102202.00
          CW%CCR¤,PWD1,13,&1.                                    102450.00 40 000322.04 84      102203.00
          CW%CD¤,PWD1,1,0                                        102450.00 20 000020.00 00      102204.00
●
```

```
@
@      TEST TWO-ECC MODE-13 WORDS PER CARD
@
@          TABLE OF STARTING POSITION OF WORDS PUNCHED
@          ALL WORDS BEGIN IN ROW 12.
@
@          WORD      COLUMN        WORD      COLUMN
@           1          1            2          7
@           3         13            4         19
@           5         25            6         31
@           7         37            8         43
@           9         49           10         55
@          11         61           12         67
@          13         73
@
@          TABLE OF BITS ON WHICH ECC BIT IS BASED
@
@              ECC BITS          DATA BITS
@               C-0             0-32
@               C-1             1, 3, 5,...,61, 63 -+ 32
@               C-2             2-3, 6-7, 10-11, ... 62-63 -+ 2
@               C-4             4-7, 12-15, ... 60-63 -
@               C-8             8-15, 24-31, 40-47, 56-63 -
@               C-16            16-31 ,48-63 -
@               C-32            0, 32-63 -
@          C-T IS BASED ON OVERALL PARITY INCLUDING ECC BITS
@
@
@
@      SET PUNCH TO ECC MODE.   CONTROL CODE 00101111
@
PCH2   CW%CR¤,PWD2,13,0                @PUNCH 1 ECC-CARD            102465.00 00 000320.00 00      102205.00
@
@      THE FOLLOWING CWS PUNCH 9 CARDS ECC MODE
@
@      FLOATING ONE C-BIT PATTERN
@
@      PUNCH NINE CARDS                 CARD      FIRST WORD  C-BITS
                                        @  1             200
                                        @  2             010
                                        @  3             000
                                        @  4             020
                                        @  5             001
                                        @  6             040
                                        @  7             002
                                        @  8             100
                                        @  9             004
@
@
       CW%CCR¤,PWD2,9,S&1.                                          102465.00 40 000222.04 87      102206.00
       CW%CDS C¤,PWD2,4,S&1.                                        102465.00 60 000102.04 88      102207.00
       CW%CCR¤,PWD2&4,,5,S&1.                                       102471.00 40 000122.04 89      102210.00
       CW%CDS C¤,PWD2,8,S&1.                                        102465.00 60 000202.04 8A      102211.00
       CW%CCR¤,PWD2&8,,1,S&1.                                       102475.00 40 000022.04 8B      102212.00
       CW%CCR¤,PWD2,9,S&1.                                          102465.00 40 000222.04 8C      102213.00
       CW%CDS C¤,PWD2,3,S&1.                                        102465.00 60 000062.04 8D      102214.00
       CW%CCR¤,PWD2&3,,6,S&1.                                       102470.00 40 000142.04 8E      102215.00
       CW%CDS C¤,PWD2,7,S&1.                                        102465.00 60 000162.04 8F      102216.00
       CW%CCR¤,PWD2&7,,2,S&1.                                       102474.00 40 000042.04 90      102217.00
       CW%CCR¤,PWD2,9,S&1.                                          102465.00 40 000222.04 91      102220.00
```

```
CW%CDSC¤,PWD2,2,$&1.          102465.00 60 000042.04 92      102221.00
CW%CCR¤,PWD2&2..7,$&1.        102467.00 40 000162.04 93      102222.00
CW%CDSC¤,PWD2,6,$&1.          102465.00 60 000142.04 94      102223.00
CW%CCR¤,PWD2&6..3,$&1.        102473.00 40 000062.04 95      102224.00
CW%CCR¤,PWD2,9,$&1.           102465.00 40 000222.04 96      102225.00
CW%CDSC¤,PWD2,1,$&1.          102465.00 60 000022.04 97      102226.00
CW%CCR¤,PWD2&1..8,$&1.        102466.00 40 000202.04 98      102227.00
CW%CDSC¤,PWD2,5,$&1.          102465.00 60 000122.04 99      102230.00
CW%CCR¤,PWD2&5..4,$&1.        102472.00 40 000102.04 9A      102231.00
CW%CD¤,PWD2,9,$&1.            102465.00 20 000222.04 9B      102232.00
```

```
*
*       THE FOLLOWING CWS PUNCH 9 CARDS ECC MODE
*
*       FLOATING ZERO C-BIT PATTERN
*
*       PUNCH NINE CARDS              CARD      FIRST WORD  C-BITS
*                                     *  1          377
*                                     *  2          357
*                                     *  3          376
*                                     *  4          337
*                                     *  5          375
*                                     *  6          277
*                                     *  7          373
*                                     *  8          177
*                                     *  9          367
*
*       SET PUNCH TO ECC MODE.  CONTROL CODE 00101111
*
*
        CW%CCR¤,PWD3,9,S&1.                              102502.00 40 000222.04 9C    102233.00
        CW%CDSC¤,PWD3,4,S&1.                             102502.00 60 000102.04 9D    102234.00
        CW%CCR¤,PWD3&4,,5,S&1.                           102506.00 40 000122.04 9E    102235.00
        CW%CDSC¤,PWD3,8,S&1.                             102502.00 60 000202.04 9F    102236.00
        CW%CCR¤,PWD3&8,,1,S&1.                           102512.00 40 000022.04 A0    102237.00
        CW%CCR¤,PWD3,9,S&1.                              102502.00 40 000222.04 A1    102240.00
        CW%CDSC¤,PWD3,3,S&1.                             102502.00 60 000062.04 A2    102241.00
        CW%CCR¤,PWD3&3,,6,S&1.                           102505.00 40 000142.04 A3    102242.00
        CW%CDSC¤,PWD3,7,S&1.                             102502.00 60 000162.04 A4    102243.00
        CW%CCR¤,PWD2&3,,2,S&1.                           102470.00 40 000042.04 A5    102244.00
        CW%CCR¤,PWD3,9,S&1.                              102502.00 40 000222.04 A6    102245.00
        CW%CDSC¤,PWD3,2,S&1.                             102502.00 60 000042.04 A7    102246.00
        CW%CCR¤,PWD3&2,,7,S&1.                           102504.00 40 000162.04 A8    102247.00
        CW%CDSC¤,PWD3,6,S&1.                             102502.00 60 000142.04 A9    102250.00
        CW%CCR¤,PWD3&6,,3,S&1.                           102510.00 40 000062.04 AA    102251.00
        CW%CCR¤,PWD3,9,S&1.                              102502.00 40 000222.04 AB    102252.00
        CW%CDSC¤,PWD3,1,S&1.                             102502.00 60 000022.04 AC    102253.00
        CW%CCR¤,PWD3&1,,8,S&1.                           102503.00 40 000202.04 AD    102254.00
        CW%CDSC¤,PWD3,5,S&1.                             102502.00 60 000122.04 AE    102255.00
        CW%CCR¤,PWD3&5,,4,S&1.                           102507.00 40 000102.04 AF    102256.00
        CW%CD¤,PWD3,9,0                                  102502.00 20 000220.00 00    102257.00
*
```

```
@
@       PUNCH TEST USING IQS DATA
@
@       TO CHECK CARDS PUNCHED, A PRINTOUT OF READ
@       IN AREA AND WRITE AREA IS PROVIDED. WRITE
@       AREA WORDS ARE PRINTED FIRST.
@                                       @NON-ECC MODE.
PCH3    CW%CD¤,PWD4,30,0                @PUNCH 2 CARDS NON-ECC MODE    102513.00 20 000740.00 00     102260.00
        CW%CD¤,PRES3,30,0              @READ 2 CARDS NON-ECC MODE      102715.00 20 000740.00 00     102261.00
        CW%CDSC¤,PRES1,7,$&1.         @IDENTIFICATION                 102677.00 60 000162.04 B3     102262.00
        CW%CDSC¤,PWD4,15,$&1.                                         102513.00 60 000362.04 B4     102263.00
        CW%CDSC¤,PWD4&15,,15,$&1.                                     102532.00 60 000362.04 B5     102264.00
        CW%CDSC¤,PRES2,7,$&1.         @IDENTIFICATION WORD            102706.00 60 000162.04 B6     102265.00
        CW%CDSC¤,PRES3,15,$&1.                                        102715.00 60 000362.04 B7     102266.00
        CW%CR¤,PRES3&15,,15,0                                         102734.00 00 000360.00 00     102267.00
@
@
@       SET PUNCH AND READER TO ECC MODE. CONTROL CODE  00101111
@
PCH4    CW%CD¤,PWD5,26,0               @PUNCH 2 CARDS ECC MODE         102551.00 20 000640.00 00     102270.00
        CW%CD¤,PRES3A,26,0            @READ 2 CARDS ECC MODE          102753.00 20 000640.00 00     102271.00
        CW%CDSC¤,PRES1,7,$&1.         @IDENTIFICATION                 102677.00 60 000162.04 BB     102272.00
        CW%CDSC¤,PWD5,13,$&1.                                         102551.00 60 000322.04 BC     102273.00
        CW%CDSC¤,PWD5&13,,$&1.                                        102566.00 62 045720.00 00     102274.00
        CW%CDSC¤,PRES2,7,$&1.         @IDENTIFICATION WORD            102706.00 60 000162.04 BE     102275.00
        CW%CDSC¤,PRES3A,13,$&1.                                       102753.00 60 000322.04 BF     102276.00
        CW%CR¤,PRES3A&13,,$&1.                                        102770.00 02 046000.00 00     102277.00
@
```

```
@          EXTENDED PUNCH TEST
@            CONTROL WORDS ARE PROVIDED FOR ECC OR NON-ECC MODE
@          FOR CHECKING, THE FOLLOWING IS INCLUDED-
@            1.CONTROL WORDS FOR READING PUNCH TEST OUTPUT.
@            ...CARDS MUST BE READ IN SAME MODE AS PUNCHED.
@            2.CONTROL WORDS TO PRINT OUT CORRECT DATA
@            AND TEST DATA,EACH IDENTIFIED, CORRECT DATA
@            WILL BE PRINTED FIRST..
@                                     @NON-ECC MODE-CF-1, 10 CARDS
@
PCH5    CW%CDSC¤,PWD6,15,S&1.        @CARD 6          102603.00 60 000362.04 C1   102300.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 C2   102301.00
        CW%CDSC¤,PWD6C,5,S&1.       @CARD 7          102622.00 60 000122.04 C3   102302.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 C4   102303.00
        CW%CDSC¤,PWD6D,5,S&1.       @CARD 10         102627.00 60 000122.04 C5   102304.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 C6   102305.00
        CW%CDSC¤,PWD6E,5,S&1.       @CARD 11         102634.00 60 000122.04 C7   102306.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 C8   102307.00
        CW%CDSC¤,PWD6F,5,S&1.       @CARD 12         102641.00 60 000122.04 C9   102310.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 CA   102311.00
        CW%CDSC¤,PWD6G,5,S&1.       @CARD 13         102646.00 60 000122.04 CB   102312.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 CC   102313.00
        CW%CDSC¤,PWD6H,5,S&1.       @CARD 14         102653.00 60 000122.04 CD   102314.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 CE   102315.00
        CW%CDSC¤,PWD6J,5,S&1.       @CARD 15         102660.00 60 000122.04 CF   102316.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 D0   102317.00
        CW%CDSC¤,PWD6K,5,S&1.       @CARD 16         102665.00 60 000122.04 D1   102320.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 D2   102321.00
        CW%CD¤,PWD6L,5,0            @CARD 17         102672.00 20 000120.00 00   102322.00
@
        CW%CD¤,PRES2,150,0          @USE THIS CW TO READ   102706.00 20 004540.00 00   102323.00
                                    @CARDS
@
@       USE THE FOLLOWING CONTROL WORDS FOR PRINTOUT
@
        CW%CDSC¤,PRES1,7,S&1.       @IDENTIFICATION   102677.00 60 000162.04 D5   102324.00
@
        CW%CDSC¤,PWD6,15,S&1.                        102603.00 60 000362.04 D6   102325.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 D7   102326.00
        CW%CDSC¤,PWD6C,5,S&1.                        102622.00 60 000122.04 D8   102327.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 D9   102330.00
        CW%CDSC¤,PWD6D,5,S&1.                        102627.00 60 000122.04 DA   102331.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 DB   102332.00
        CW%CDSC¤,PWD6E,5,S&1.                        102634.00 60 000122.04 DC   102333.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 DD   102334.00
        CW%CDSC¤,PWD6F,5,S&1.                        102641.00 60 000122.04 DE   102335.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 DF   102336.00
        CW%CDSC¤,PWD6G,5,S&1.                        102646.00 60 000122.04 E0   102337.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 E1   102340.00
        CW%CDSC¤,PWD6H,5,S&1.                        102653.00 60 000122.04 E2   102341.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 E3   102342.00
        CW%CDSC¤,PWD6J,5,S&1.                        102660.00 60 000122.04 E4   102343.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 E5   102344.00
        CW%CDSC¤,PWD6K,5,S&1.                        102665.00 60 000122.04 E6   102345.00
        CW%CCR¤,PWD6,10,S&1.                         102603.00 40 000242.04 E7   102346.00
        CW%CDSC¤,PWD6L,5,S&1.                        102672.00 60 000122.04 E8   102347.00
@
        CW%CDSC¤,PRES2,7,S&1.       @IDENTIFICATION WORD   102706.00 60 000162.04 E9   102350.00
        CW%CDSC¤,PRES4,15,S&1.      @FROM READ AREA        103005.00 60 000362.04 EA   102351.00
        CW%CDSC¤,PRES5,15,S&1.                             103024.00 60 000362.04 EB   102352.00
        CW%CDSC¤,PRES6,15,S&1.                             103043.00 60 000362.04 EC   102353.00
        CW%CD5C¤,PRES7,15,S&1.                             103062.00 60 000362.04 ED   102354.08
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CW%CDSC¤,PRES8,15,$&1.          103101.00 60 000362.04 EE      102355.00
CW%CDSC¤,PRES9,15,$&1.          103120.00 60 000362.04 EF      102356.00
CW%CDSC¤,PRES10,15,$&1.         103137.00 60 000362.04 F0      102357.00
CW%CDSC¤,PRES11,15,$&1.         103156.00 60 000362.04 F1      102360.00
CW%CDSC¤,PRES12,15,$&1.         103175.00 60 000362.04 F2      102361.00
CW%CR¤,PRES13,15,0              103214.00 00 000360.00 00      102362.00
```

```
                @
                @     SET PUNCH AND READER TO ECC MODE. CONTROL CODE  00101111
                @
                @
                @                              @ECC MODE-CF-1,10 CARDS
                @
PCH6    CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.04 F4    102363.00
        CW%CDSC¤,PWD6B,5,$&1.           @CARD 6                   102615.00 60 000122.04 F5    102364.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.04 F6    102365.00
        CW%CDSC¤,PWD6C,5,$&1.           @CARD 7                   102622.00 60 000122.04 F7    102366.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.04 F8    102367.00
        CW%CDSC¤,PWD6D,5,$&1.           @CARD 10                  102627.00 60 000122.04 F9    102370.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.04 FA    102371.00
        CW%CDSC¤,PWD6E,5,$&1.           @CARD 11                  102634.00 60 000122.04 FB    102372.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.04 FC    102373.00
        CW%CDSC¤,PWD6F,5,$&1.           @CARD 12                  102641.00 60 000122.04 FD    102374.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.04 FE    102375.00
        CW%CDSC¤,PWD6G,5,$&1.           @CARD 13                  102646.00 60 000122.04 FF    102376.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.05 00    102377.00
        CW%CDSC¤,PWD6H,5,$&1.           @CARD 14                  102653.00 60 000122.05 01    102400.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.05 02    102401.00
        CW%CDSC¤,PWD6J,5,$&1.           @CARD 15                  102660.00 60 000122.05 03    102402.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.05 04    102403.00
        CW%CDSC¤,PWD6K,5,$&1.           @CARD 16                  102665.00 60 000122.05 05    102404.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.05 06    102405.00
        CW%CD¤,PWD6L,5,$&1.             @CARD 17                  102672.00 20 000122.05 07    102406.00
                @
                @
        CW%CD¤,PRES14,130,0             @CONTROL WORD TO READ CARDS  103233.00 20 004040.00 00  102407.00
                @
                @     USE THE FOLLOWING CONTROL WORDS FOR PRINTOUT
                @
        CW%CDSC¤,PRES1,7,$&1.           @IDENTIFICATION           102677.00 60 000162.05 09    102410.00
        CW%CCR¤,PWD6,8,$&1.             @WRITE AREA               102603.00 40 000202.05 0A    102411.00
        CW%CDSC¤,PWD6B,5,$&1.                                     102615.00 60 000122.05 0B    102412.00
        CW%CCR¤,PWD6,8,$&1.             @WRITE AREA               102603.00 40 000202.05 0C    102413.00
        CW%CDSC¤,PWD6C,5,$&1.                                     102622.00 60 000122.05 0D    102414.00
        CW%CCR¤,PWD6,8,$&1.             @WRITE AREA               102603.00 40 000202.05 0E    102415.00
        CW%CDSC¤,PWD6D,5,$&1.                                     102627.00 60 000122.05 0F    102416.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.05 10    102417.00
        CW%CDSC¤,PWD6E,5,$&1.                                     102634.00 60 000122.05 11    102420.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.05 12    102421.00
        CW%CDSC¤,PWD6F,5,$&1.                                     102641.00 60 000122.05 13    102422.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.05 14    102423.00
        CW%CDSC¤,PWD6G,5,$&1.                                     102646.00 60 000122.05 15    102424.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.05 16    102425.00
        CW%CDSC¤,PWD6H,5,$&1.                                     102653.00 60 000122.05 17    102426.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.05 18    102427.00
        CW%CDSC¤,PWD6J,5,$&1.                                     102660.00 60 000122.05 19    102430.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.05 1A    102431.00
        CW%CDSC¤,PWD6K,5,$&1.                                     102665.00 60 000122.05 1B    102432.00
        CW%CCR¤,PWD6,8,$&1.                                       102603.00 40 000202.05 1C    102433.00
        CW%CDSC¤,PWD6L,5,$&1.                                     102672.00 60 000122.05 1D    102434.00
        CW%CDSC¤,PRES2,7,$&1.           @IDENTIFICATION WORD      102706.00 60 000162.05 1E    102435.00
        CW%CDSC¤,PRES14,13,$&1.         @READ AREA                103233.00 60 000322.05 1F    102436.00
        CW%CDSC¤,PRES15,13,$&1.                                   103250.00 60 000322.05 20    102437.00
        CW%CDSC¤,PRES16,13,$&1.                                   103265.00 60 000322.05 21    102440.00
        CW%CDSC¤,PRES17,13,$&1.                                   103302.00 60 000322.05 22    102441.00
        CW%CDSC¤,PRES18,13,$&1.                                   103317.00 60 000322.05 23    102442.00
        CW%CDSC¤,PRES19,13,$&1.                                   103334.00 60 000322.05 24    102443.00
        CW%CDSC¤,PRES20,13,$&1.                                   103351.00 60 000322.05 25    102444.00
        CW%CDSC¤,PRES21,13,$&1.                                   103366.00 60 000322.05 26    102445.00
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	CW%CDSC¤,PRES22,13,$61.	103403.00 60 000322.05 27	102446.00
	CW%CDSC¤,PRES23,13,$61.	103420.00 60 000322.05 28	102447.00
●			
●			
●			
●	PUNCH TEST DATA		
●			
●	NON-ECC MODE DATA		
●			
PWD1	%8¤DD%BU,8,8¤,200,004,000,040,001,000,010,000	200	102450.00
		004	102450.10
		000	102450.20
		040	102450.30
		001	102450.40
		000	102450.50
		010	102450.60
		000	102450.70
	%8¤DD%BU,8,8¤,100,002,000,020,000,200,004,000	100	102451.00
		002	102451.10
		000	102451.20
		020	102451.30
		000	102451.40
		200	102451.50
		004	102451.60
		000	102451.70
	%8¤DD%BU,8,8¤,040,001,000,010,000,100,002,000	040	102452.00
		001	102452.10
		000	102452.20
		010	102452.30
		000	102452.40
		100	102452.50
		002	102452.60
		000	102452.70
	%8¤DD%BU,8,8¤,020,000,200,004,000,040,001,000	020	102453.00
		000	102453.10
		200	102453.20
		004	102453.30
		000	102453.40
		040	102453.50
		001	102453.60
		000	102453.70
	%8¤DD%BU,8,8¤,010,000,100,002,000,020,000,200	010	102454.00
		000	102454.10
		100	102454.20
		002	102454.30
		000	102454.40
		020	102454.50
		000	102454.60
		200	102454.70
	%8¤DD%BU,8,8¤,004,000,040,001,000,010,000,100	004	102455.00
		000	102455.10
		040	102455.20
		001	102455.30
		000	102455.40
		010	102455.50
		000	102455.60
		100	102455.70
	%8¤DD%BU,8,8¤,002,000,020,000,200,004,000,040	002	102456.00
		000	102456.10
		020	102456.20
		000	102456.30
		200	102456.40
		004	102456.50
		000	102456.60
		040	102456.70

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                    %8¤DD%BU,8,8¤,001,000,010,000,100,002,000,020                              001   102457.00
                                                                                             000   102457.10
                                                                                             010   102457.20
                                                                                             000   102457.30
                                                                                             100   102457.40
                                                                                             002   102457.50
                                                                                             000   102457.60
                                                                                             020   102457.70
                    %8¤DD%BU,8,8¤,000,200,004,000,040,001,000,010                              000   102460.00
                                                                                             200   102460.10
                                                                                             004   102460.20
                                                                                             000   102460.30
                                                                                             040   102460.40
                                                                                             001   102460.50
                                                                                             000   102460.60
                                                                                             010   102460.70
                    %8¤DD%BU,8,8¤,000,100,002,000,020,000,200,004                              000   102461.00
                                                                                             100   102461.10
                                                                                             002   102461.20
                                                                                             000   102461.30
                                                                                             020   102461.40
                                                                                             000   102461.50
                                                                                             200   102461.60
                                                                                             004   102461.70
                    %8¤DD%BU,8,8¤,000,040,001,000,010,000,100,002                              000   102462.00
                                                                                             040   102462.10
                                                                                             001   102462.20
                                                                                             000   102462.30
                                                                                             010   102462.40
                                                                                             000   102462.50
                                                                                             100   102462.60
                                                                                             002   102462.70
                    %8¤DD%BU,8,8¤,000,020,000,200,004,000,040,001                              000   102463.00
                                                                                             020   102463.10
                                                                                             000   102463.20
                                                                                             200   102463.30
                                                                                             004   102463.40
                                                                                             000   102463.50
                                                                                             040   102463.60
                                                                                             001   102463.70
                    %8¤DD%BU,8,8¤,000,010,000,100,002,000,030,000                              000   102464.00
                                                                                             010   102464.10
                                                                                             000   102464.20
                                                                                             100   102464.30
                                                                                             002   102464.40
                                                                                             000   102464.50
                                                                                             020   102464.60
                                                                                             000   102464.70
 18      @       THE FOLLOWING ARE DATA WORDS FOR THE ECC
         @       MODE-THE CHECK BITS ARE IN OCTAL NOTATION
         @
 15      @       FLOATING ZERO PATTERN                        @ C-BITS
 14   PWD2    %8¤DD%BU,8,8¤,301,200,000,000,101,200,000,000    @377                            301   102465.00
                                                                                             200   102465.10
                                                                                             000   102465.20
                                                                                             000   102465.30
                                                                                             101   102465.40
                                                                                             200   102465.50
                                                                                             000   102465.60
                                                                                             000   102465.70
              %8¤DD%BU,8,8¤,350,200,200,000,230,200,200,000    @177                            350   102466.00
                                                                                             200   102466.10
                                                                                             200   102466.20
                                                                                             000   102466.30
                                                                                             230   102466.40
                                                                                             200   102466.50
```

Label	Instruction	@Ref	Data	Value	Address
				200	102466.60
				000	102466.70
	%8¤DD%BU,8,8¤,020,000,000,000,240,000,000,000	@277		020	102467.00
				000	102467.10
				000	102467.20
				000	102467.30
				240	102467.40
				000	102467.50
				000	102467.60
				000	102467.70
	%8¤DD%BU,8,8¤,002,000,000,000,210,000,000,000	@337		002	102470.00
				000	102470.10
				000	102470.20
				000	102470.30
				210	102470.40
				000	102470.50
				000	102470.60
				000	102470.70
	%8¤DD%BU,8,8¤,000,010,000,000,200,200,000,000	@357		000	102471.00
				010	102471.10
				000	102471.20
				000	102471.30
				200	102471.40
				200	102471.50
				000	102471.60
				000	102471.70
	%8¤DD%BU,8,8¤,000,000,000,200,200,000,200,000	@367		000	102472.00
				000	102472.10
				000	102472.20
				200	102472.30
				200	102472.40
				000	102472.50
				200	102472.60
				000	102472.70
	%8¤DD%BU,8,8¤,000,000,000,200,200,200,000,000	@373		000	102473.00
				000	102473.10
				000	102473.20
				200	102473.30
				200	102473.40
				200	102473.50
				000	102473.60
				000	102473.70
	%8¤DD%BU,8,8¤,140,000,000,000,020,000,000,000	@375		140	102474.00
				000	102474.10
				000	102474.20
				000	102474.30
				020	102474.40
				000	102474.50
				000	102474.60
				000	102474.70
	DD%BU,64,8¤,0		000000000000000000000		102475.00
	DD%BU,64,8¤,0		000000000000000000000		102476.00
	DD%BU,64,8¤,0		000000000000000000000		102477.00
	DD%BU,64,8¤,0		000000000000000000000		102500.00
	DD%BU,64,8¤,0		000000000000000000000		102501.00
@	FLOATRNG ONE PATTERN	C-BITS			
PWD3	%8¤DD%BU,8,8¤,350,200,200,000,000,000,000,000	@200		350	102502.00
				200	102502.10
				200	102502.20
				000	102502.30
				000	102502.40
				000	102502.50
				000	102502.60
				000	102502.70
	%8¤DD%BU,8,8¤,050,200,000,000,000,000,200,000	@100		050	102503.00
				200	102503.10

		000	102503.20
		000	102503.30
		000	102503.40
		000	102503.50
		200	102503.60
		000	102503.70
%8¤DD%BU,8,8¤,110,200,000,000,000,000,200,000	@040	110	102504.00
		200	102504.10
		000	102504.20
		000	102504.30
		000	102504.40
		000	102504.50
		200	102504.60
		000	102504.70
%8¤DD%BU,8,8¤,140,200,000,000,000,000,200,000	@020	140	102505.00
		200	102505.10
		000	102505.20
		000	102505.30
		000	102505.40
		000	102505.50
		200	102505.60
		000	102505.70
%8¤DD%BU,8,8¤,160,000,000,000,000,000,2)0,000	@010	160	102506.00
		000	102506.10
		000	102506.20
		000	102506.30
		000	102506.40
		000	102506.50
		200	102506.60
		000	102506.70
%8¤DD%BU,8,8¤,160,000,000,000,000,200,000,000	@004	160	102507.00
		000	102507.10
		000	102507.20
		000	102507.30
		000	102507.40
		200	102507.50
		000	102507.60
		000	102507.70
%8¤DD%BU,8,8¤,350,200,000,000,000,200,0J0,000	@002	350	102510.00
		200	102510.10
		000	102510.20
		000	102510.30
		000	102510.40
		200	102510.50
		000	102510.60
		000	102510.70
%8¤DD%BU,8,8¤,030,200,000,000,000,200,000,000	@001	030	102511.00
		200	102511.10
		000	102511.20
		000	102511.30
		000	102511.40
		200	102511.50
		000	102511.60
		000	102511.70
%8¤DD%BU,8,8¤,350,000,000,200,000,000,0J0,000	@000	350	102512.00
		000	102512.10
		000	102512.20
		200	102512.30
		000	102512.40
		000	102512.50
		000	102512.60
		000	102512.70

CNOP

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PWD4     %8□DD%BU,8,8□,000              @CCB#CARRIAGE CONTROL BYTE            000    102513.00
         %  AZ□DD%BU,8,8□,PUNCH TEST USING IQS - DATA-THIS IS Z                     102513.10
         %  AZ□DD%BU,8,8□,CARD ONE OF PWD4 DATA WORDS. Z                            102517.50
         %  AZ□DD%BU,8,8□,IDENTIFIED BY A 1 IN COLUMN 80.Z                          102523.20
                                                                                    102527.10
         %  AZ□DD%BU,8,8□,ROW 9. ECC MODEZ
         %8□DD%BU,8,8□,000,000,000,000,000,000,000,001                       000    102531.00
                                                                             000    102531.10
                                                                             000    102531.20
                                                                             000    102531.30
                                                                             000    102531.40
                                                                             000    102531.50
                                                                             000    102531.60
                                                                             001    102531.70


         %8□DD%BU,8,8□,000              @CCB                                  000    102532.00
         %  AZ□DD%BU,8,8□,  THIS IS CARD TWO OF PWD4 DATA Z                          102532.10
         %  AZ□DD%BU,8,8□,WORDS. IT IS IDENTIFIED WITH A 1Z                          102536.10
         %  AZ□DD%BU,8,8□, IN COLUMN 80, ROW 8...ECC MODEZ                           102542.10
         DD%BU,64,8□,0                            0000000000000000000000      102546.00
         DD%BU,64,8□,0                            0000000000000000000000      102547.00
         %8□DD%BU,8,8□,000,000,000,000,000,000,000,002                       000    102550.00
                                                                             000    102550.10
                                                                             000    102550.20
                                                                             000    102550.30
                                                                             000    102550.40
                                                                             000    102550.50
                                                                             000    102550.60
                                                                             002    102550.70


PWD5     %8□DD%BU,8,8□,000              @CCB                                  000    102551.00
         %  AZ□DD%BU,8,8□, THIS IS CARD ONE OF PWD5 DATA Z                           102551.10
         %  AZ□DD%BU,8,8□,WORDS. IT IS IDENTIFIED WITH A 1Z                          102555.00
         %  AZ□DD%BU,8,8□, IN COLUMN 78, ROW 8&9. NO-ECC. Z                          102561.00
         %8□DD%BU,8,8□,000,000,000,000,000,000,000,003                       000    102565.00
                                                                             000    102565.10
                                                                             000    102565.20
                                                                             000    102565.30
                                                                             000    102565.40
                                                                             000    102565.50
                                                                             000    102565.60
                                                                             003    102565.70
         %8□DD%BU,8,8□,000                                                    000    102566.00
         %  AZ□DD%BU,8,8□, THIS IS CARD TWO OF PWD5 DATA Z                           102566.10
         %  AZ□DD%BU,8,8□,WORDS. IT IS IDENTIFIED WITH A 1Z                          102572.00
         %  AZ□DD%BU,8,8□, IN COLUMN 78, ROW 7.NO-ECC MODEZ                          102576.00
         %8□DD%BU,8,8□,000,000,000,000,000,000,000,004                       000    102602.00
                                                                             000    102602.10
                                                                             000    102602.20
                                                                             000    102602.30
                                                                             000    102602.40
                                                                             000    102602.50
                                                                             000    102602.60
                                                                             004    102602.70
PWD6     %8□DD%BU,8,8□,000                                                    000    102603.00
         %  AZ□DD%BU,8,8□,XTENDED CF-1 PUNCH TESTZ                                   102603.10

PWD6A    %  AZ□DD%BU,8,8□, CARD IS NUMBERED OCTAL IN LAST Z                          102606.00
         %  AZ□DD%BU,8,8□,COLUMN. NON-ECC MODE....Z                                  102612.00
PWD6B    %  AZ□DD%BU,8,8□,CARD ONE OF EXTENDED CF-1 TEST..Z                          102615.00
         %8□DD%BU,8,8□,000,000,000,000,000,000,000,006                       000    102621.00
                                                                             000    102621.10
                                                                             000    102621.20
                                                                             000    102621.30
                                                                             000    102621.40
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                                                                              000    102621.50
                                                                              000    102621.60
                                                                              006    102621.70
        PWD6C      %  AZ¤DD%BU,8,8¤,CARD TWO OF EXTENDED CF-1 TEST..Z                 102622.00
                   %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,007                000    102626.00
                                                                              000    102626.10
                                                                              000    102626.20
                                                                              000    102626.30
                                                                              000    102626.40
                                                                              000    102626.50
                                                                              000    102626.60
                                                                              007    102626.70
        PWD6D      %  AZ¤DD%BU,8,8¤,CARD THREE OF EXTENDED CF1 TEST.Z                 102627.00
                   %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,010               000    102633.00
                                                                              000    102633.10
                                                                              000    102633.20
                                                                              000    102633.30
                                                                              000    102633.40
                                                                              000    102633.50
                                                                              000    102633.60
                                                                              010    102633.70
        PWD6E      %  AZ¤DD%BU,8,8¤,CARD FOUR OF EXTENDED CF-1 TEST.Z                 102634.00
                   %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,011               000    102640.00
                                                                              000    102640.10
                                                                              000    102640.20
                                                                              000    102640.30
                                                                              000    102640.40
                                                                              000    102640.50
                                                                              000    102640.60
                                                                              011    102640.70
        PWD6F      %  AZ¤DD%BU,8,8¤,CARD FIVE OF EXTENDED CF-1 TEST.Z                 102641.00
                   %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,012               000    102645.00
                                                                              000    102645.10
                                                                              000    102645.20
                                                                              000    102645.30
                                                                              000    102645.40
                                                                              000    102645.50
                                                                              000    102645.60
                                                                              012    102645.70
        PWD6G      %  AZ¤DD%BU,8,8¤,CARD SIX OF EXTENDED CF-1 TEST..Z                 102646.00
                   %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,013               000    102652.00
                                                                              000    102652.10
                                                                              000    102652.20
                                                                              000    102652.30
                                                                              000    102652.40
                                                                              000    102652.50
                                                                              000    102652.60
                                                                              013    102652.70
        PWD6H      %  AZ¤DD%BU,8,8¤,CARD SEVEN OF EXTENDED CF1 TEST.Z                  102653.00
                   %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,014               000    102657.00
                                                                              000    102657.10
                                                                              000    102657.20
                                                                              000    102657.30
                                                                              000    102657.40
                                                                              000    102657.50
                                                                              000    102657.60
                                                                              014    102657.70
        PWD6J      %  AZ¤DD%BU,8,8¤,CARD EIGHT OF EXTENDED CF1 TEST.Z                  102660.00
                   %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,015               000    102664.00
                                                                              000    102664.10
                                                                              000    102664.20
                                                                              000    102664.30
                                                                              000    102664.40
                                                                              000    102664.50
                                                                              000    102664.60
                                                                              015    102664.70
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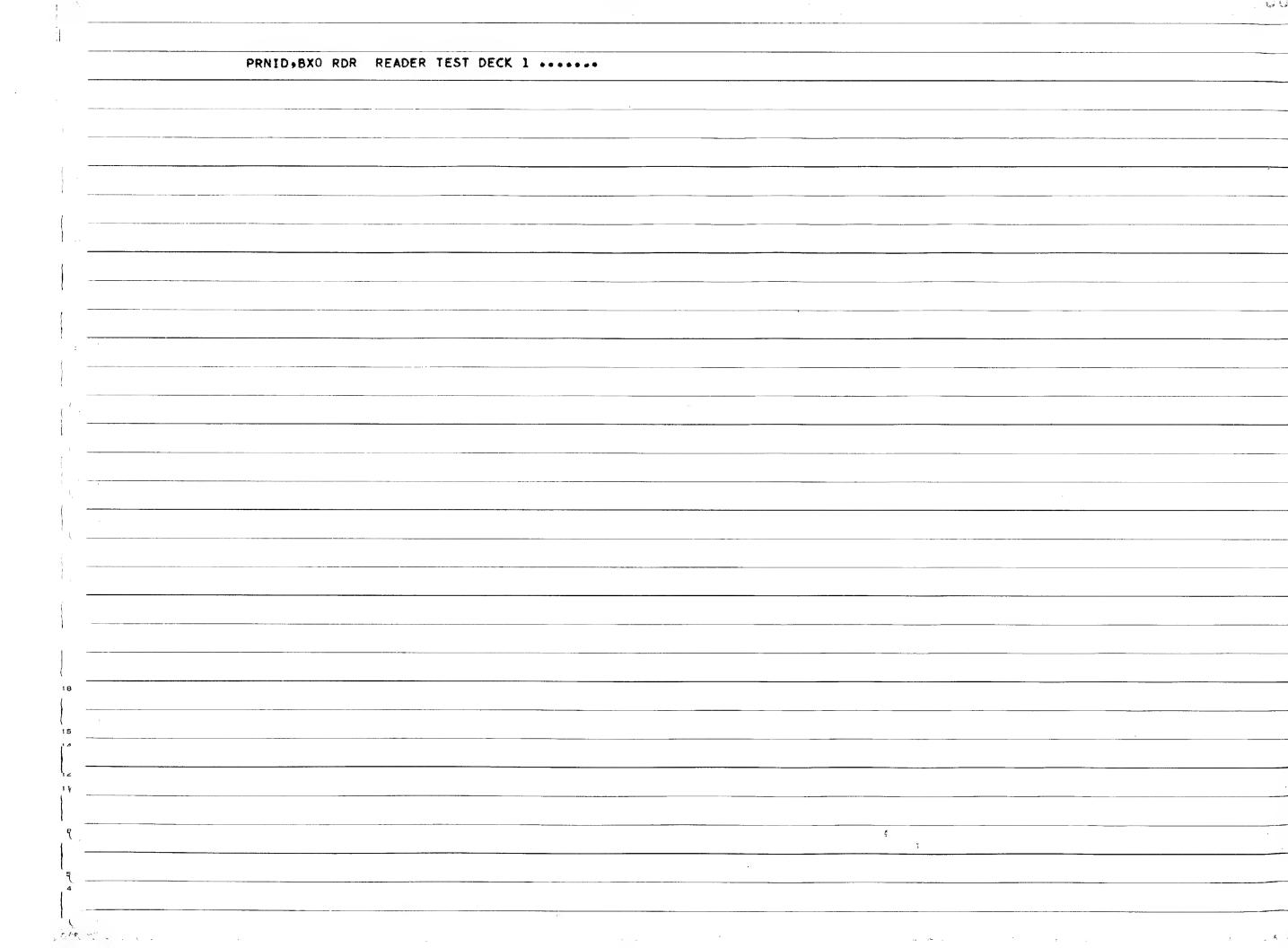
PWD6K	% AZ¤DD%BU,8,8¤,CARD NINE OF EXTENDED CF-1 TEST.Z			102665.00
	%8¤DD%BU,8,8¤,000,000,000,000,000,000,000,016		000	102671.00
			000	102671.10
			000	102671.20
			000	102671.30
			000	102671.40
			000	102671.50
			000	102671.60
			016	102671.70
PWD6L	% AZ¤DD%BU,8,8¤,CARD TEN OF EXTENDED CF-1 TEST..Z			102672.00
	%8¤DD%BU,8,8¤,000,000,000,000,000,000,000,017		000	102676.00
			000	102676.10
			000	102676.20
			000	102676.30
			000	102676.40
			000	102676.50
			000	102676.60
			017	102676.70
PRES1	%8¤DD%BU,8,8¤,001		001	102677.00
	% AZ¤DD%BU,8,8¤,THIS IS THE DATA FROM THE WRITEZ			102677.10
	% AZ¤DD%BU,8,8¤, AREA OF THE PUNCH TEST.Z			102703.00
PRES2	%8¤DD%BU,8,8¤,001		001	102706.00
	% AZ¤DD%BU,8,8¤,THIS IS THE DATA FROM THE READ Z			102706.10
	% AZ¤DD%BU,8,8¤, AREA OF THE PUNCH TEST.Z			102712.00
PRES3	DR%BU,64,8¤,30	@READ-IN AREA	36.00	102715.00
PRES3A	DR%BU,64,8¤,26	@READ-IN AREA-ECC	32.00	102753.00
PRES4	DR%BU,64,8¤,15	@NON-ECC MODE	17.00	103005.00
PRES5	DR%BU,64,8¤,15		17.00	103024.00
PRES6	DR%BU,64,8¤,15		17.00	103043.00
PRES7	DR%BU,64,8¤,15		17.00	103062.00
PRES8	DR%BU,64,8¤,15		17.00	103101.00
PRES9	DR%BU,64,8¤,15		17.00	103120.00
PRES10	DR%BU,64,8¤,15		17.00	103137.00
PRES11	DR%BU,64,8¤,15		17.00	103156.00
PRES12	DR%BU,64,8¤,15		17.00	103175.00
PRES13	DR%BU,64,8¤,15		17.00	103214.00
PRES14	DR%BU,64,8¤,13	@READ-IN AREA	15.00	103233.00
PRES15	DR%BU,64,8¤,13	@NON-ECC MODE	15.00	103250.00
PRES16	DR%BU,64,8¤,13		15.00	103265.00
PRES17	DR%BU,64,8¤,13		15.00	103302.00
PRES18	DR%BU,64,8¤,13		15.00	103317.00
PRES19	DR%BU,64,8¤,13		15.00	103334.00
PRES20	DR%BU,64,8¤,13		15.00	103351.00
PRES21	DR%BU,64,8¤,13		15.00	103366.00
PRES22	DR%BU,64,8¤,13		15.00	103403.00
PRES23	DR%BU,64,8¤,13		15.00	103420.00
END	DR%BU,64,8¤,1		1.00	103435.00
	END,START		100000.00	103436.00

```
     SLC,64.0                                                          000100.00
     PUNID,BX0-RDR                                     BX0-RDR
     END,64.0                                          100.00          000100.00
```

PRNID,BX0 RDR   READER TEST DECK 1 ....

	SLC,64,0			000100.00
@	SLC VALUE IS MEANINGLESS			
	PUNEUL			
@	THIS IS TEST PATTERN DECK 1. RESULTS CAN BE			
@	EASILY DETERMINED BY USING CHKRDR CONTROL WORD			
@	SEQUENCE,AND/OR DATA DISPLAY.			
@	A SECOND PATTERN DECK WILL BE MADE AVAILABLE			
@	WHICH CONTAINS SPECIAL PATTERN CARDS.CHECKS ARE			
@	MADE BY DISPLAYING MEMORY.USE TEST DECK 2 IF			
@	PRINTER OPERATION IS DOUBTFUL.....			
@				
@				
CARD1	%8¤DD%BU,8,8¤,000		000	000100.00
	% AZ¤DD%BU,8,8¤,CARD1 .....FIRST CARD READ...DATA IS INZ			000100.10
	% AZ¤DD%BU,8,8¤, IQS FORMAT. WORD COUNT ON READ WAS 15 .Z			000105.00
	% AZ¤DD%BU,8,8¤,READER PATTERNS IN LATER TEST...Z			000112.00
	%8¤DD%BU,8,8¤,000,000,000,000,000,000,000,001 @CRD 1 IDENT		000	000116.00
			000	000116.10
			000	000116.20
			000	000116.30
			000	000116.40
			000	000116.50
			000	000116.60
			001	000116.70
@				
CARD2	%8¤DD%BU,8,8¤,000		000	000117.00
	% AZ¤DD%BU,8,8¤,WDCT1 Z			000117.10
	% AZ¤DD%BU,8,8¤,FAILURE Z			000120.00
	% AZ¤DD%BU,8,8¤,IF THIS PRINTS OR IS IN MEM, WD Z			000121.00
	% AZ¤DD%BU,8,8¤,CNT-1-WAS NOT HANDLED BY BX.....Z			000125.00
	DR%BU,64,8¤,4 @WORDS 11-14 CARD 2 ARE ZERO.	4.00		000131.00

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        %8¤DD%BU,8,8¤,000,000,000,000,000,000,010,002   @CRD 2 IDENT                           000   000135.00
                                                                                               000   000135.10
                                                                                               000   000135.20
                                                                                               000   000135.30
                                                                                               000   000135.40
                                                                                               000   000135.50
                                                                                               000   000135.60
                                                                                               002   000135.70

        ●

CARD3   %8¤DD%BU,8,8¤,000              ●                                                         000   000136.00
        %   AZ¤DD%BU,8,8¤,WORD COUNT -2- Z                                                            000136.10
        %   AZ¤DD%BU,8,8¤,FAILURE Z                                                                   000140.00
        DR%BU,64,8¤,11               @CARD 3 BLANK LOCATIONS                  13.00                    000141.00
        %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,003  @CRD 3 IDENT                             000   000154.00
                                                                                               000   000154.10
                                                                                               000   000154.20
                                                                                               000   000154.30
                                                                                               000   000154.40
                                                                                               000   000154.50
                                                                                               000   000154.60
                                                                                               003   000154.70

        ●

CARD4   %8¤DD%BU,8,8¤,000                                                                       000   000155.00
        %   AZ¤DD%BU,8,8¤,IF THIS PRINTS SKIP FLAG FAILEDZ                                            000155.10
        %   AZ¤DD%BU,8,8¤,CARD4-SKIP FLAG TEST....Z                                                   000161.00
        DR%BU,64,8¤,7                                                        7.00                     000164.00
        %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,004  @CRD 4 IDENT                             000   000173.00
                                                                                               000   000173.10
                                                                                               000   000173.20
                                                                                               000   000173.30
                                                                                               000   000173.40
                                                                                               000   000173.50
                                                                                               000   000173.60
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                    ●

CARD5    %8¤DD%BU,8,8¤,000                                              000    000174.00

         %  AZ¤DD%BU,8,8¤,CARD 5 THREE CARD READ, ABCDEFGHIJKLMNOZ             000174.10

         %  AB¤DD%BU,8,8¤,PQRSTUVWXYZ 0123456789 CARD 5 THREE CARDB            000201.00

         %  A9¤DD%BU,8,8¤, READ ABCDEFGHIJKLMNOP)RSTUVWXYZ9                    000206.00

         %8¤DD%BU,8,8¤,000,000,000,000,000,000,0)0,005  @CRD 5 IDENT    000    000212.00

                                                                       000    000212.10

                                                                       000    000212.20

                                                                       000    000212.30

                                                                       000    000212.40

                                                                       000    000212.50

                                                                       000    000212.60

                                                                       005    000212.70

                    ●

CARD6    %8¤DD%BU,8,8¤,000                                              000    000213.00

         %  AZ¤DD%BU,8,8¤,CARD 6 ...3 CARD READ, CARD 2  HIJKLMNOZ             000213.10

         %  AB¤DD%BU,8,8¤,PQRSTUVWXYZ 0123456789 CARD 6 THREE CARDB            000220.00

         %  A9¤DD%BU,8,8¤, READ ABCDEFGHIJKLMNOPQRSTUVWXYZ9                    000225.00

         %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,006  @CRD 6 IDENT   000    000231.00

                                                                       000    000231.10

                                                                       000    000231.20

                                                                       000    000231.30

                                                                       000    000231.40

                                                                       000    000231.50

                                                                       000    000231.60

                                                                       006    000231.70

                    ●

CARD7    %8¤DD%BU,8,8¤,000                                              000    000232.00

         %  AZ¤DD%BU,8,8¤,CARD 7 ...3 CARD READ, CARD 3  HIJKLMNOZ             000232.10

         %  AB¤DD%BU,8,8¤,PQRSTUVWXYZ 0123456789 CARD 7 THREE CARDB            000237.00

         %  A9¤DD%BU,8,8¤, READ ABCDEFGHIJKLMNOPQRSTUVWXYZ9                    000244.00

         %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,007  @CRD 7 IDENT   000    000250.00
```

	000	000250.10
	000	000250.20
	000	000250.30
	000	000250.40
	000	000250.50
	000	000250.60
	007	000250.70

●

CARD8 %8¤DD%BU,8,8¤,000		000	000251.00
% AZ¤DD%BU,8,8¤,CARD 8 TEN CARD READ.8388888888888888888Z			000251.10
% AZ¤DD%BU,8,8¤,8888888888888888888888888388888888888888888Z			000256.00
% AZ¤DD%BU,8,8¤, TEN CARD READ.-CARD 1 Z			000263.00
DR%BU,64,8¤,1	1.00		000266.00
%8¤DD%BU,8,8¤,000,000,000,000,000,000,000,010 @CRD 8 IDENT		000	000267.00
		000	000267.10
		000	000267.20
		000	000267.30
		000	000267.40
		000	000267.50
		000	000267.60
		010	000267.70

●

CARD9 %8¤DD%BU,8,8¤,000		000	000270.00
% AZ¤DD%BU,8,8¤,CARD 9 TEN CARD READ. 999999999999999999Z			000270.10
% AZ¤DD%BU,8,8¤,9999999999999999999999999999999999999999999Z			000275.00
% AZ¤DD%BU,8,8¤, -TEN CARD READ.-CARD 2 Z			000302.00
DR%BU,64,8¤,1	1.00		000305.00
%8¤DD%BU,8,8¤,000,000,000,000,000,000,000,011 @CRD 9 IDENT		000	000306.00
		000	000306.10
		000	000306.20
		000	000306.30
		000	000306.40
		000	000306.50

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                                                                                    000    000306.60
                                                                                    011    000306.70

        ●

CARD10   %8¤DD%BU,8,8¤,000                                                           000    000307.00 6

         %  AZ¤DD%BU,8,8¤,CARD 10 TEN CARD READ. Z                                          000307.10

         DR%BU,64,8¤,7                                              7.00                     000312.00

         %  AZ¤DD%BU,8,8¤,  TEN CARD READ.-CARD 3 Z                                         000321.00

         DR%BU,64,8¤,1                                              1.00                     000324.00

         %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,012  @CRD 10 IDENT               000    000325.00

                                                                                    000    000325.10

                                                                                    000    000325.20

                                                                                    000    000325.30

                                                                                    000    000325.40

                                                                                    000    000325.50

                                                                                    000    000325.60

                                                                                    012    000325.70

        ●

CARD11   %8¤DD%BU,8,8¤,000                                                           000    000326.00 6

         %  AZ¤DD%BU,8,8¤,CARD 11 TEN CARD READ. Z                                          000326.10

         DR%BU,64,8¤,7                                              7.00                     000331.00

         %  AZ¤DD%BU,8,8¤,  TEN CARD READ.-CARD 4 Z                                         000340.00

         DR%BU,64,8¤,1                                              1.00                     000343.00

         %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,013  @CRD 11 IDENT               000    000344.00

                                                                                    000    000344.10

                                                                                    000    000344.20

                                                                                    000    000344.30

                                                                                    000    000344.40

                                                                                    000    000344.50

                                                                                    000    000344.60

                                                                                    013    000344.70

        ●

CARD12   %8¤DD%BU,8,8¤,000                                                           000    000345.00 6

         %  AZ¤DD%BU,8,8¤,CARD 12 TEN CARD READ. Z                                          000345.10
```

DR%BU,64,8¤,7	7.00		000350.00
% AZ¤DD%BU,8,8¤, TEN CARD READ.-CARD 5 Z			000357.00
DR%BU,64,8¤,1	1.00		000362.00
%8¤DD%BU,8,8¤,000,000,000,000,000,000,000,014 @CRD 12 IDENT		000	000363.00
		000	000363.10
		000	000363.20
		000	000363.30
		000	000363.40
		000	000363.50
		000	000363.60
		014	000363.70
@			
CARD13 %8¤DD%BU,8,8¤,000		000	000364.00 6
% AZ¤DD%BU,8,8¤,CARD 13 TEN CARD READ. Z			000364.10
DR%BU,64,8¤,7	7.00		000367.00
% AZ¤DD%BU,8,8¤, TEN CARD READ.-CARD 6 Z			000376.00
DR%BU,64,8¤,1	1.00		000401.00
%8¤DD%BU,8,8¤,000,000,000,000,000,000,000,015 @CRD 13 IDENT		000	000402.00
		000	000402.10
		000	000402.20
		000	000402.30
		000	000402.40
		000	000402.50
		000	000402.60
		015	000402.70
@			
CARD14 %8¤DD%BU,8,8¤,000		000	000403.00 6
% AZ¤DD%BU,8,8¤,CARD 14 TEN CARD READ. Z			000403.10
DR%BU,64,8¤,7	7.00		000406.00
% AZ¤DD%BU,8,8¤, TEN CARD READ.-CARD 7 Z			000415.00
DR%BU,64,8¤,1	1.00		000420.00
%8¤DD%BU,8,8¤,000,000,000,000,000,000,000,016 @CRD 14 IDENT		000	000421.00
		000	000421.10

		000	000421.20
		000	000421.30
		000	000421.40
		000	000421.50
		000	000421.60
		016	000421.70
●			
CARD15 %8¤DD%BU,8,8¤,000		000	000422.00 6
% AZ¤DD%BU,8,8¤,CARD 15 TEN CARD READ. Z			000422.10
DR%BU,64,8¤,7	7.00		000425.00
% AZ¤DD%BU,8,8¤, TEN CARD READ.-CARD 8 Z			000434.00
DR%BU,64,8¤,1	1.00		000437.00
%8¤DD%BU,8,8¤,000,000,000,000,000,000,020,017 @CRD 15 IDENT		000	000440.00
		000	000440.10
		000	000440.20
		000	000440.30
		000	000440.40
		000	000440.50
		000	000440.60
		017	000440.70
●			
CARD16 %8¤DD%BU,8,8¤,000		000	000441.00 6
% AZ¤DD%BU,8,8¤,CARD 16 TEN CARD READ. Z			000441.10
DR%BU,64,8¤,7	7.00		000444.00
% AZ¤DD%BU,8,8¤, TEN CARD READ.-CARD 9 Z			000453.00
DR%BU,64,8¤,1	1.00		000456.00
%8¤DD%BU,8,8¤,000,000,000,000,000,000,000,021 @CRD 16 IDENT		000	000457.00
		000	000457.10
		000	000457.20
		000	000457.30
		000	000457.40
		000	000457.50
		000	000457.60

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                    ●

CARD17   %8¤DD%BU,8,8¤,000                                                    000    000460.00 6

         %  AZ¤DD%BU,8,8¤,CARD 17 TEN CARD READ. Z                                  000460.10

         DR%BU,64,8¤,7                                          7.00                000463.00

         %  AZ¤DD%BU,8,8¤,  TEN CARD READ.-CARD 10Z                                 000472.00

         DR%BU,64,8¤,1                                          1.00                000475.00

         %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,022  @CRD 17 IDENT        000    000476.00

                                                                             000    000476.10

                                                                             000    000476.20

                                                                             000    000476.30

                                                                             000    000476.40

                                                                             000    000476.50

                                                                             000    000476.60

                                                                             022    000476.70

                    ●

CARD18   %8¤DD%BU,8,8¤,000                                                    000    000477.00 6

         %  AZ¤DD%BU,8,8¤,CARD 18. TWO CARD READ WITH MF-0. ONLY Z                  000477.10

         %  AZ¤DD%BU,8,8¤,ONE CARD SHOULD READ....Z                                 000504.00

         DR%BU,64,8¤,6                                          6.00                000507.00

         %8¤DD%BU,8,8¤,000,000,000,000,000,000,000,023  @CRD 18 IDENT        000    000515.00

                                                                             000    000515.10

                                                                             000    000515.20

                                                                             000    000515.30

                                                                             000    000515.40

                                                                             000    000515.50

                                                                             000    000515.60

                                                                             023    000515.70

                    ●

CARD19   %8¤DD%BU,8,8¤,000                                                    000    000516.00 6

         %  AZ¤DD%BU,8,8¤,THIS CARD SHOULD NOT BE READ    Z                         000516.10

         %  AZ¤DD%BU,8,8¤,CARD 19 Z                                                 000522.00

         DR%BU,64,8¤,10                                        12.00                000523.00
```

%8nDD%BU.8.8n.000.000.000.000.000.000.030.024 @CRD 19 IDENT	000	000535.00
	000	000535.10
	000	000535.20
	000	000535.30
	000	000535.40
	000	000535.50
	000	000535.60
	024	000535.70
NOP 0.30.00		000536.00
END.64.0 100.00		000536.40